COLONY OF MAURITIUS

Annual Report

OF THE

Department of Agriculture

for the year 1962

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COMMONWEALTH MYCOLOGICAL
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J. ELIEL FÉLIX, I.S.O., GOVERNMENT PRINTER,
PORT LOUIS, MAURITIUS
NOVEMBER 1963

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DEPARTMENT OF AGRICULTURE,
REDUIT,
15th July, 1963.

SIR,

I have the honour to submit the Annual Report of the Department of Agriculture for the year 1962.

I have the honour to be,
Sir,
Your obedient servant,
M. D. FFRENCH-MULLEN,
Director of Agriculture.

THE HONOURABLE THE MINISTER OF AGRICULTURE AND NATURAL RESOURCES,
Ministry of Agriculture and Natural Resources,
Port Louis.

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Annual Report of the Department of Agriculture for the Year 1962

I. General Review

During 1962, there was no important change in the policy of the Department of Agriculture. It continued to centre around the maximum utilisation of all agricultural land and water resources. Closely connected with this objective was the development of the livestock industry. particularly the production of milk, meat and poultry. In regard to the framing of policy, the Ministry of Agriculture and Natural Resources and the Department were assisted by the Board of Agriculture, Fisheries and Natural Resources.

2. In order to fulfil the task assigned to it by the Ministry, the Department was organised into 13 divisions employing 324 officers including a Director and two Deputy Directors who plan and carry out the experimental, development and extension work of the Department.

3. Nearly all the technical officers of the Department were initially provided by the College of Agriculture which functions as a division of the Department. Professional and specialist staff complete their training overseas. The College also provided technical staff to the Sugar Industry, other agricultural industries and to the Mauritius Sugar Industry Research Institute. The College continued to offer two three-year courses leading to the Diploma in Agriculture and the Diploma in Sugar Technology respectively.

4. The work of the Department is broadly divided into :—

(a) experimental, to study crops and livestock in the various environmental conditions obtaining in Mauritius ;

(b) extension, to advise and assist farmers with a view to their obtaining the maximum return from their farms.

5. During the year under review, the Department has maintained the essential services which it continues to provide for the Sugar Industry, namely the Sugar Millers and Planters Central Arbitration and Central Board which regulates the sale and purchase of canes, the College of Agriculture which provides the industry with its cadre of trained staff and the Extension Service for small sugar-cane planters whose main aim is to raise the small planters' yields of cane to a figure more comparable with those of estates. The Plant and Animal Inspection Service and the ultimate responsibility for plant and animal quarantine, including that of sugar-cane, remained the responsibility of the Department although, by mutual agreement with the Mauritius Sugar Industry Research Institute, the latter now maintains and supervises the working of the Cane Quarantine Greenhouse. The Department has worked in close co-operation with the Sugar Industry Research Institute and other organisations aud has participated in the administration of the Sugar Industry Rehabilitation Funds which include the Pointe-aux-Sables Cane Nurseries for the production of disease-free planting material for small cane planters and the Sugar Planters Mechanical Pool.

6. The development of agricultural industries other than sugar has continued to be the major concern of the Department. No effort has been spared to promote schemes for the encouragement of the production of tea, tobacco, foodcrops and livestock products.

7. The tea industry is controlled by the Tea Control Board under the chairmanship of the Director of Agriculture. 4,658 arpents of land are now planted to tea. The success of the revised methods of developing land under tea, which has continued, resulted in the decision in 1961 to embark on a project of developing 2,500 acres of land to tea for issue to small holders in farms of about 4 acres. The size of the farm to be issued was subsequently determined after studying the information obtained from an agro-economic survey carried out on a random sample of established tea small holdings. By the end of 1962, 600 acres had been contour surveyed in the new project, 420 acres cleared and 150 acres planted to tea. The original tea development project continued to make progress, particularly following the decision of the Mauritius Agricultural Bank to make loans to tea project planters cultivating leased Crown Land. 1,850 acres of the 3,000 acres of land in this project had been planted by the end of the year, including 300 acres planted by Government for distribution to small holders. Work in the selection of clones and vegetative propagation continued and long-term experiments on pruning and fertilizer applications were laid down. The bulk of the seed required for planting was again imported from Central Africa. Work on the establishment of a new tea nursery was commenced but dependence on seed supplies from Africa will continue for some years.

8. In June, one of the seven tea factories, that at Mare Anguilles, closed down. Production of tea was 2.8 million lbs, being practically the same as for the previous year. 1.6 million lbs of tea were exported, mainly to the United Kingdom. The average price received for export teas was 3s—11.2d per lb, 1.4 pence per lb lower than in 1961.

9. The Nuwara Eliya Tea Estate Company (Mauritius) Limited continued to operate as Government's Managing Agents for Midlands Tea Estate and Chartreuse Tea Factory.

10. The tobacco industry is controlled by the Tobacco Board under the chairmanship of the Director of Agriculture. A full report on the industry is published annually by the Board which also provides an extension service to the industry as well as purchases, grades, stores and markets the crop. The research services are provided by the Department of Agriculture which also produces seed of all approved varieties for the industry. Production continued to be limited to the requirements of the two firms manufacturing cigarettes locally ; the possibility of an export market remained remote. Crop conditions as regards climate, pests and diseases were generally satisfactory. The quality of flue-cured Virginian and Amarello tobaccos was better than in recent years which was reflected in the higher average prices received for flue-cured tobaccos. The quality and average prices obtained for air-cured Amarello and Burley tobaccos were similar to last year. 372 tons of tobacco of all types were produced from 681 arpents compared with 504 tons from 802 arpents in 1961. Purchase prices remained unaltered.

11. The Mauritius Hemp Producers' Syndicate continued to control the marketing of aloe fibre. The Government Sack Factory, of which the Director of Agriculture is Chairman and a Deputy Director in charge of management, manufactured sacks from the fibre for local use by the Sugar Industry, which is for practical purposes the sole consumer. 1,299 metric tons of aloe fibre were sold to the factory, an increase of 188 metric tons on 1961 deliveries. Pure aloe sacks and sacks made of a mixture of aloe fibre and imported jute were manufactured. The cost of production of these sacks was higher than the cost of imported jute sacks with the result that the industry has to be subsidised.

12. The programme of progeny testing of bulls of the Creole breed was continued and additional basic data collected. The production of selected breeds of herd cattle, pigs, goats, poultry and rabbits for sale to breeders and for experimental work continued. The Boran cattle at Palmar show much promise. The dairy cattle artificial insemination service was maintained and there was an overall improvement in the conception rate. The poultry breeding project made notable progress ; a complete demonstration broiler project, including a processing and packing plant, was constructed and went into production. The demand for the products of the Livestock Feed Factory continued to increase and for they ear rose from Rs. 1,200,000 to almost Rs. 1,500,000.

13. The veterinary aid service dealt with a large number of cases, mainly on milch cattle ; the cases included pregnancy assessment, infertility, delivery of calves in case of malpresentation, digestive disorders and mastitis. The new building to house the Animal Health Laboratory was completed, providing adequate facilities for disease investigation and the production of vaccines and sera.

14. The main objective of the extension services was the improvement of the standard of crop husbandry by small farmers. Close liaison was maintained between the Extension Services, the Mauritius Sugar Industry Research Institute and the specialist officers of the Department of Agriculture. Advice was given to planters on the use of fertilizers and improved varieties, the control of pests and diseases as well as on soil conservation measures. A large number of fertilizer demonstrations were carried out on farmers' lands. Marked differences in yield in favour of complete fertilizers were obtained in these demonstrations. Evening lectures were given to planters in all districts ; the main topics discussed being the time and method of application of fertilizers in sugar cane and other crops, the control of pests and diseases and the preventive spraying of potato crops against blight. Films were also shown to planters at these meetings. Radio talks were given by officers of the Department on various topics of interest to farmers.

15. Vegetable seeds were issued free to *bona fide* vegetable growers whose plantations had suffered from cyclone *Jenny*. As a result, vegetable supplies returned to normal unusually quickly after the cyclone.

16. The " Produce More Food Campaign " was extended to seven more villages ; fifteen villages are now in the campaign. Leaflets on the breeding of fowls and rabbits, and on the control of diseases affecting the main crops were prepared and distributed to farmers. Fruit trees, chickens at point-of-lay, as well as planting material of foodcrops and elephant and pangola grass were delivered to villages.

17. Thirteen demonstration silo pits and four new ones were filled with chaffed cane tops, sprayed with molasses. Cowkeepers showed less interest in silage this year because there was, in general, adequate green fodder available due to favourable climatic conditions.

18. In order to encourage the use of good quality, disease free seed potatoes, the purchase of certified seed potatoes by small farmers was subsidised. Permits for the subsidisation of 600 tons of certified seed potatoes were issued and about 750 arpents of potatoes were inspected twice, both before and after planting. The use of good seed benefitted yields. The potato spraying scheme against blight was also successful ; some 268 arpents of pototoes belonging to small planters were sprayed. The demand for this service continued to increase and it has had the effect of encouraging planters to invest in their own sprayers for blight and pest control.

19. The Land Settlement Committee met twice to consider questions in connection with conditions of tenure, transfer of holdings and for the selection of tenants. The settlements met with various difficulties during the year and none can be considered to be completely successful. Tenants continue to press for authority to plant up their holding completely with sugar-cane. In many cases, the areas earmarked for foodcrops are only partly cultivated or left fallow. The irrigation system at Terre Rouge was improved. Tenants at the Palmar Settlement suffered from drought and the foodcrop production settlement at Plaisance did not yield sufficient returns to meet production costs of tenants in a number of instances.

20. The experimental work on the various stations was carried out as planned. The tobacco variety Vesta, released for growers' trials in 1961 was more widely planted in 1962 and gave the results expected as regards yield and disease resistance. There is little doubt that this variety is a valuable addition to the established Virginian varieties, Yellow Mammoth and Bonanza. In a variety trial, Vesta out-yielded the other two Virginian varieties but the value of the leaf was somewhat lower. The yield of the Burley varieties, released for limited production was disappointing due to the incidence of mildew and mosaic diseases. The fumigation of seedbeds has become routine and the practice of pre-sowing and routine spraying with Zineb is spreading. The testing of new varieties, limited breeding and the production of seed for the tobacco industry was continued. The seed supply position has returned to normal following cyclonic damage to the seed producing crops in recent years.

21. The demand for locally produced vegetable seeds increased substantially, the value of sales being practically double that for 1961. Some 43 acres on experimental stations were devoted to seed production. The demand for plants, particularly fruit trees, has also doubled, the selling prices having been revised downwards during the year by 50 percent to encourage the planting of fruit trees. The stations were assisted in meeting the increased demand for plants by mist propagation and additional mist propagators are being installed. Local selections of the major vegetables continue to prove superior to imported varieties.

22. Five thousand two hundred stocks of local and Florida rough lemon were planted out for the production of budded orange and grapefruit plants. The average take was 55 per cent at one station and 65 per cent at another. Preliminary results are such as to justify the rapid expansion of citrus propagation, expansion being limited by local sources of seed for stocks and budwood. Provided citrus is adequately fertilized, sprayed regularly against pests and diseases, there is no doubt that oranges and grapefruit of acceptable quality can be produced for local consumption.

23. In 1962, additional fodder grasses and legumes were introduced for trial, the most promising of which were *Chloris gayana*, Giant Rhodes grass and *Panicum maximum* var. Trichoglume, Slender Guinea grass, two species of *Lotononis bainesii* and *Desmodium intortum*. Grazing and forage trials continued. Pangola grass continued to be promising, particularly in the coastal areas, while in the uplands, a local selection of *Setaria spacelata* for winter growth, made in 1961, showed considerable promise growing well throughout the winter of 1962.

24. The effect of fertilizers on the main grazing and forage grasses continued to yield valuable information. Major responses in yield were obtained from the application of nitrogen.

25. Experiments in growing out of season cauliflower and broad beans in the uplands were continued. There is no doubt that provided attention is given to watering, pest and disease control, these vegetables can be grown profitably in the uplands out of season. In 1962, a time of planting trial on garlic in the uplands indicated that planting in late April on early May gave greater yields than earlier or later planting.

26. Variety trials with vegetables, groundnuts, cassava, potatoes and maize were carried out. Potato yields were 5—6 tons per acre. A hybrid maize introduced from Kenya, Kitale Synthetic II outyielded the local selection by 50 per cent, both having a 4½ month crop cycle. Another Kenya hybrid maize, Taboran which gave yields similar to the local selection is of considerable interest as its yield was obtained in a crop cycle of 3½ months.

27. The Solo papaw was re-introduced from Hawaii. The apple variety Tropical Beauty, which is reputed to produced acceptable eating apples in tropical Queensland, Australia, was flown in for trial.

28. Cyclone *Jenny* severely damaged the canopy of many trees in the Royal Botanical Gardens as well as doing other damage. The Gardens continued to be a valuable source of planting material, some 12,000 ornamental shrubs being produced for planting up the centre island of the M.R.1 road.

29. Investigations were carried out on a wide range of diseases affecting crops other than sugar cane. Tobacco was comparatively free of the three common diseases, Brown spot, Black Shank and Frogeye spot. Amarello tobacco was found to suffer from Granville Wilt, and Mosaic and Powdery Mildew seriously affected the Burley varieties. A Vapam drench was found to be beneficial on groups of tea bushes affected by *Armillaria* and a new root disease of tea was found to be caused by *Poria* sp. The failure of tea seed to germinate and develop properly in sand seedbeds was found to be due to heavy infestation with nematodes. Spraying trials were conducted for the control of potato Blight, Grey-leaf spot on tomato and Powdery Mildew on peas. In addition diseases of maize, groundnut. cassava, beans, brassicae, cucurbits, chillies, citrus, filao and ornamentals were investigated. Grafting experiments indicated that Rosette disease of groundnuts was not present in Mauritius. 35 new diseases of crops and ornamentals were recorded for the first time.

30. Control continued to be exercised on the importation of plants and plant parts in accordance with agreements under the Inter-African Phyto-Sanitary Convention. The importation of animals, animal products and animal feeds was similarly controlled. Quarantine facilities for live plants and animals were provided ; a new three-roomed quarantine greenhouse was completed. It was found in trials that ethylene dibromide was only toxic to fruit-flies at relatively high dosages at atmospheric temperatures and pressures and did not affect scale insects.

31. Recoveries of the predatory snail *Euglandina rosea*, which attacks the giant snail *Achatina fulica*, have continued to be satisfactory. Attempts to import a further 5,000 individuals failed in that only 250 were procured. 50 of these were retained at Réduit in an effort to breed them in captivity for local distribution. The other predatory snail that was introduced and liberated, *Gonaxis quadrilateralis* has not yet been recovered.

32. The Natal fruit fly, *Ceratitis rosa* caused considerable damage to untreated peach, loquat and mango crops. Regular sprayings with Lebaycid or Dipterex ensured a reasonable crop of fruit. It has been found that the wild guava, *Psidium cattleianum* was an alternative host for this fruit fly. The introduction of four parasites of this fruit fly from Hawaii and France was continued but none have been recovered.

33. Two predators of the Rhinoceros beetle were introduced. *Scarites dubiosus* from India and *Platymenus rhadamanthus* from Zanzibar for despatch to Diego Garcia. *Teleomemia scrupulosa*, assisted in certain areas by *Hypena stritatus* continued to control *Lantana aculeata* in the drier areas.

34. The evaluation of new insecticides coming on the market continued. Baytex applied as a wall spray continues to be very effective in the control of *Stomoxys nigra*. assisted by the application of Dieldrin to manure heaps.

35. The Agricultural Chemistry Division, apart from miscellaneous analytical work for the public, undertook all the analytical work of the other divisions in connection with their experimental programmes. Some 1,300 samples were analysed. The raw materials used in the manufacture of stock feeds at the Livestock Feed Factory and the feeds themselves were regularly checked. All grasses and fodder crops under test were analysed for protein content etc. It was found that the vines at harvest of the promising groundnut variety Manipintar possessed a crude protein content of 13.4 per cent on a dry matter basis. Routine analyses of samples of milk from cows of the Creole breed on stations show that the average fat content of the milk throughout the year is 3.9 per cent on 504 samples. On no occasion has the fat content of the milk fallen below 3 per cent and 20 of the samples yielded fat contents of over 5 per cent.

36. The Engineering Division undertook the construction of various buildings required during the year including such major works as the animal health laboratory, two quarantine greenhouses. an insectarium and overseers quarters and the extension of the office at Wooton. Other building projects in hand at the end of the year comprised a major extension of the offices of the Central Board, a new feed store at Richelieu and a new mist propagator. The testing of new agricultural machinery was commenced. All Departmental vehicles, tractors and agricultural machinery were maintained and serviced at the workshop and numerous items fabricated. It maintained and operated the Livestock Feed Factory and ensured, in close co-operation with the Animal Husbandry Officer, who is responsible for formulations, the preparation of a variety of stock feeds for sale to the public. The demand for these feeds continued to rise and, towards the end of the year with the closure of a local stock feed factory, the demand was such that emergency measures had to be taken to increase supplies of raw materials. In 1962, sales totalling Rs 1,475,343 were recorded compared with Rs 1,156,000 in 1961 and Rs 489,746 in 1958.

37. Work on fresh water fish farming was continued. *Catla Catla* and *Labeo Rohita*, imported from India show promise.

38. The growth of young oysters at Pointe de Flacq and Trou d'Eau Douce continued to be satisfactory. At Beau Rivage, the majority of oysters were killed by silt coupled with the flooding of the pond with fresh water. At Poudre d'Or, the death of a high proportion of the oysters was thought to be due to variations in salinity.

39. A new fisheries post was constructed at Black River and two fish sheds were built, one each at Black River and La Gaulette.

40. Cyclone *Jenny* caused considerable damage to the fishing fleet with the result that the total catch fell by 272 tons compared with 1961. The loss of boats did not materially affect net fisheries. It is of interest to note that the net fisheries catch was greater than in the years 1957–59 when a close season was enforced.

41. Since the commencement of the loans to fishermen scheme for the construction of boats in 1660, 993 loans have been made of which 23 were written off following the destruction of new boats by cyclone *Jenny*. The demand for loans continued and, in general, repayments were satisfactory.

42. An expert from the Fisheries Research Board of Canada, under the auspices of Canadian Technical Assistance, undertook a survey of the fisheries of Mauritius and Rodrigues over a period of three months and submitted a report on the fishing and marketing problems of the country.

43. In Rodrigues work on the development plan was adversely affected throughout the year by three cyclones and a drought. A cyclone in January was followed by an intense cyclone in April which struck the island causing damage to crops and buildings. The result was that no foodcrops were harvested from the main cropping season. A drought followed causing the failure of the winter season crops to be completed in December by another cyclone, accompanied by torrential rain, which destroyed the early planted main season crops. There was therefore no harvest of foodcrops during 1962 and most fruit trees were destroyed. In spite of adverse climatic conditions, the approximate value of exports rose to Rs. 1,357,790 compared to Rs. 1,108,490 in 1961.

44. Since the inception of the Rodrigues development plan, 1,147 unit farms situated in the uplands, 485 lowland farms and 902 vegetable plots have been developed. The number of farms of all types developed during the year was 283 compared with 589 in 1961 due to pre-occupation with emergency work following natural disasters. The planting of shade trees on the cattlewalk was completed and the re-afforestation of steep slopes, catchment areas and the provision of windbreaks were continued. Work on the establishment of pangola grass for peasant dairy farms continued and 40 acres of the cattlewalk were planted to this grass and paddocked with stone walls. The development of water resources continued together with the construction of dams and distribution of piped water to developed farms. The value of the improved water supplies that have been developed in the past few years was amply demonstrated during the drought. The breeding centres sold to farmers 34 cows and 65 young bullocks together with 22 adult sows, 7 adult boars, 341 young female and 329 young male pigs.

45. In June, the Rodrigues Division took over the Land Lease Office and, in spite of the fact that cyclone "Maud" in April had destroyed most of the records which had to be re-constructed as well as a drought, the arrears of rent were reduced by about 25 per cent in six months. The annual cattle census was undertaken and showed a satisfactory reduction in the cattle population on the cattlewalk which was overstocked.

II.—Boards and Committees

46. The Director of Agriculture or his representative served on the following boards and committees :-

Board of Agriculture, Fisheries and Natural Resources
Agricultural College Advisory Board
Board of Examiners of the College of Agriculture
Board of Examiners for the Registration of Agricultural Chemists
Comité de Collaboration Agricole Maurice—Réunion—Madagascar
Customs Tariff Advisory Board
Cyclone and Drought Insurance Board
Fisheries Committee

Irrigation Committee
Land Acquisition Board
Land Settlement Committee
Cane Release Committee
Malaria Advisory Board
Mauritius Sugar Industry Research Institute Executive Board
Mauritius Sugar Industry Research Advisory Committee Industry
Sugar Industry Rehabilitation Fund Committee
Sugar Industry Reserve Fund Committee
Sugar Millers' Rehabilitation Fund Committee
Sugar Planters' Rehabilitation Fund Committee
Government Sack Factory Board
Tea Control Board
Tobacco Board

III. Board of Agriculture, Fisheries and Natural Resources

47. The Board functions under Ordinance No. 29 of 1957. The following committees were set up by the Board for specific purposes :—

(a) The Fisheries Committee

(b) The Land Settlement Committee

(c) The Irrigation Committee

(d) The Cane Release Committee

The Board met on two occasions to discuss the utilization of river reserves and water resources. In regard to river reserves, it unanimously decided to advise that all river reserves, including reserves on the banks of rivulets and feeders, below the 500 foot contour line should be de-reserved and opened to restricted cropping.

IV. Mauritius Chamber of Agriculture

48. The Chamber of Agriculture continued to play its important role in the agricultural affairs of Mauritius. Its representatives took part in the annual series of meetings between the Commonwealth Sugar Exporters and officials of the Ministry of Agriculture, Fisheries and Food in the United Kingdom in connection with the Commonwealth Sugar Agreement. Developments in regard to the International Sugar Agreement and the world sugar market were kept under constant review. The Chamber appointed the Committee to administer the Sugar Industry Reserve Fund. It also nominates delegates to the following Board and Committees :—The Customs Tariff Advisory Board, the Agricultural College Advisory Board, the *Conseil d'Administration de la Revue Agricole*, the Hurricane Loan Board. the Sugar Industry Rehabilitation Fund Committee, the Sugar Millers' Rehabilitation Fund Committee, the Sugar Planters' Rehabilitation Fund Committee, the Electricity Advisory Committee, the Mauritius Sugar Industry Research Institute Board, the Cyclone and Drought Insurance Fund Board, the Sugar Industry Labour Welfare Fund Committee, the Government Sack Factory Board, the Malaria Advisory Board, the Board of Agriculture, Fisheries and Natural Resources, the Tea Control Board, the Labour Advisory Board, the Morris Legacy, Fund and the Town and Country Planning Board. The work of this organisation is fully reported in its annual report.

V.—Comite de Collaboration Agricole Maurice—Reunion—Madagascar

49. In 1962, the Director of Agriculture of Madagascar was the Chairman of the Committee with the Directors of Agriculture of Reunion and Mauritius Vice-Chairman. The twelth meeting, scheduled to be held towards the end of the year, was postponed to 1963 because of the meeting in Mauritius in September and October of the XIth Congress of the International Society of Sugar Cane Technologists.

50. Amongst the visits sponsored by the Committee in the three territories, the following were of special interest to Mauritius :—

(a) Visits of Mr. R. Antoine to Madagascar in connection with the control of Fiji disease and other diseases of sugar-cane ;

(b) Visits of Mr. A. Baissac and Mr. P. Hotchin to Reunion in connection with tea development and development of smallholdings ;

(c) Visits of Mr. A. Orian to Reunion and Madagascar on entomological matters ;

(d) Visit of students of the Mauritius College of Agriculture to Reunion and a reciprocal visit to Mauritius of students of the Reunion College of Agriculture.

VI. College of Agriculture

51. The College of Agriculture continued to offer two three-year courses leading to a Diploma in Agriculture and a Diploma in Sugar Technology. One-year courses for certificates in Sugar Analysis and Sugar Cane Cultivation were also offered.

52. The teaching staff consisted of four full-time lecturers, three full-time assistant lecturers and demonstrators, and seventeen part-time lecturers. The teaching of Sugar Technology and Engineering was undertaken by officers of the Sugar Industry Research Institute. The teaching of some of the other applied subjects was undertaken by part-time lecturers, mainly officers of the Department of Agriculture and of the Sugar Industry Research Institute. The teaching of accountancy and economics has been introduced. Greater emphasis has been placed on practical work in the workshop and in the field.

Entrance Examinations and Scholarships

53. Twenty-seven candidates applied for admission to the Diploma courses, twenty-four in Agriculture and three in Sugar Technology. Of these one withdrew, twenty-two passed the entrance examination and were enrolled. Sixteen candidates applied for admission to the Sugar Cane Cultivation Course. The Sugar Analysis Course was not run as only two candidates were eligible.

54. Two entrance scholarships were awarded by the College, one by the Sugar Industry Research Institute and one by the Sugar Industry Staff Employees' Association. Two scholarships were instituted by the Ministry of Agriculture and Natural Resources for award to candidates from Rodrigues with the object of eventually providing trained local-born staff for the Agricultural services in that island.

Student Body

55. The number and distribution of students were as follows :—

Course	*1959*	*1960*	*1961*	*1962*
Diploma	52	47	49	51
Certificate in Sugar Cane Cultivation ...	36	19	13	16
Certificate in Sugar Analysis	6	7	10	—
Part-time	8	4	—	2
Total	102	77	72	69

56. One student in the Agriculture Diploma Course left of his own accord at the end of July.

Examination Results and Laureateships

57. The results of the annual examinations held in April were as follows :—

	1960		*1961*		*1962*	
	Sat	*Passed*	*Sat*	*Passed*	*Sat*	*Passed*
Diploma in Agriculture 1st Year ...	—	—	—	—	13	10
Diplema in Sugar Technology 1st Year ...	—	—	—	—	8	5
Old Combined Diploma :						
1st Year	21	12	25	13	—	—
2nd Year	10	8	13	13	14	14
3rd Year	19	18	9	9	13	12
Certificate in Cane Cultivation ..	29	14	11	9	13	11
Ceriificate in Sugar Analysis	5	4	6	6	3	3

58. Of the six failures in the 1st Year examinations, one left the College of his own accord and the remainder repeated the year. On student failed his third year and was not allowed to repeat : of the 12 who passed, three obtained the Honours Diploma.

59. A laureateship was awarded and the admission of the laureate to Birmingham University was obtained where he will read for a degree in Bacteriology. Admission to universities in the United Kingdom was also obtained for three other 3rd-Year students at the Royal Technical College, Glasgow, to study chemical engineering and at Reading and the University of North Wales to study agriculture. All former laureates of the College, who are pursuing their studies at universities overseas, passed their respective examinations. The 1959 laureate obtained the Isaac Newton Medals for Physics at Glasgow. The 1958 laureate obtained his M.S. in Mechanical Engineering at Purdue University. The 1957 laureate qualified with 1st class honours in Botany at Aberdeen and was awarded the Trail Prize for the best honours thesis and the Kilgour scholarship.

Visits of Students to Reunion

60. Under the auspices of the "Comité de Collaboration Agricole Maurice-Réunion-Madagascar" a party of six 3rd-Year students accompanied by the Lecturer in Physics and Mathematics and the Lecturer in Agriculture visited Reunion early in August. A return visit by Reunion students took place in December.

XIth Congress of the I.S.S.C.T.

61. The College of Agriculture was placed at the disposal of the International Society of Sugar Cane Technologists for the holding of the 'Agricultural' Sessions XIth Congress which was held in Mauritius from the 24th September to the 5th of October.

Presentation of Awards

62. His Excellency the Officer Administering the Government presented the Diplomas and Prizes on the 12th July. The Minister of Agriculture addressed the assembly as part of the traditional proceedings of this annual event.

VII Central Board

63. The Central Board operated under the Sale of Canes (Control) Ordinance. The executive machinery of the Board was run as a division of the Department of Agriculture.

Meetings of the Board

64. The Board held 32 meetings during the year :—

4 meetings in connection with the assessment of sugar to planters ;
3 meetings in connection with changes of delimitation of factory areas ;
11 meetings in connection with protests against the assessment of sugar ;
1 meeting in connection with the closing down of weighbridges ;
13 meetings in connection with general business.

Cane Testing

65. 20,235 tests were carried out on the canes of 240 planters or groups of planters and 129 millers' estate sections supplying canes to 22 factories. The corresponding figures for the 1961 crop were 20,998 tests in respect of 241 planters or groups of planters and 125 estate sections supplying canes to 22 factories.

Assessment of Sugar

66. Following the publication of figures of provisional assessment of sugar to planters for the 1961 crop, 22 Co-operative Credit Societies and 12 planters lodged protests against the awards made by the Board. One Co-operative Credit Society and one planter subsequently withdrew their protests. All other protests were heard by the Board but in no case was the assessment published varied.

Cost of Production

67. Cost questionnaires were sent to 75 planters, selected according to weight of cane produced and to 23 estates with factories to secure the necessary data for the computation of costs of production.

Transport Costs

68. Before the crop commenced, a schedule of rates was issued showing the maximum rate claimable by millers for the transport of planters' canes in each factory area from the various outlying weighbridges to the factory. The schedule was based on the following formulae :—

$C = Rs\ (2.25 + .25\ m)$ for road transport and
$C = Rs\ (2.10 + 1.50m)$ for rail tranport

When " C " is the cost of transport per ton of cane and " m " the number of miles over which transport is effected.

Delimitation of Factory Areas

69. Twelve applications for changes of delimitation of factory areas were received. One of the applications was withdrawn, one was granted, and the others were either rejected or not entertained.

Permits to Middlemen

70. Permits were issued to 55 middlemen for the crop.

Complaints against Middlemen

71. Seventy-eight complaints against middlemen were received most of them being in connection with the payment of compensation by the Cyclone and Drought Insurance Fund. In almost all cases the middlemen and the planters settled their differences through the good offices of the Board.

Cane Contracts

72. 14,053 cane contracts were registered. The total number of contracts in force in 1962 was 14,575 covering 22,792 planters, an increase on the previous year.

Breach of Sale of Canes (Control) Ordinance

73. Two cases of breach of Sale of Canes (Control) Ordinance were reported to the police and prosecutions were instituted.

74. The number of planters who failed to enter into contract before the 30th Jnne totalled 300 compared with 510 last year.

Cane Varieties

75. During the year under review, the varieties approved for planting were the following : M 134/32 (together with its white and striped sports), M 112/34, Ebene 1/37, B.H. 10/12, B 3337, B 37161, B 37172, M 147/44, M 31/45, M 202/45. In the course of the year, the varieties E 50/47 and M 253/48 were released for planting.

Control of Cane Weighbridges

76. The number of cane weighbridges in operation in 1962 was 122 compared with 128 in 1961 ; 6 having been closed down with the Board's approval. Of this total, 118 weighbridges were found to be accurate on first examination and the other four on second examination. Five weighbridges were checked for accuracy during the crop, four on the request of the Commissioner of Police and one on the request of the owner. All five were found to be accurate.

Surprise Checks carried out at Weighbridges

77. During the crop, 240 surprise checks were carried out and 167 vehicles were reweighed (50 carts and 117 lorries). In six cases, the weighing was found to be inaccurate ; two weighers were prosecuted and warnings were issued to the other four.

VIII. The Sugar Industry

Crop Results

78. The total area under cane was 204,974 arpents of which 193,772 were reaped, compared with 201,170 and 187,288 arpents respectively for 1961. The crop suffered from the high winds of two cyclones, the first of which was on Christmas Day, 1961, and the second on the 28th February, 1962. The indifferent results of the crop were due mainly to the damage caused by the second cyclone. The production of sugar amounted to 532,856 metric tons compared with 553,259 tons in 1961. The yield of sugar per arpent was 2.75 metric tons, compared with 2.95 in 1961. The average crushing rate was 102.9 metric tons per hour compared with 92.8 in 1961 ; the average daily crushing rate was 1,967 metric tons compared with 1,750 metric tons in 1961. 1962 has been declared a cyclone year by the Cyclone and Drought Insurance Board for all factory areas save one.

Cane Varieties

79. In order of importance, the main varieties making up the 1962 crop were the following : M 147/44, E 1/37, M 134/32 and B 37172. The above mentioned varieties accounted for about 76 per cent of the crop and the remaining 24 per cent were made up of B 3337, M 31/45, M 202/46, B 34104, M 93/48, M 253/48 and E 50/47.

Quotas and Prices

80. The negociated price quota for the calendar year 1962 under the Commonwealth Sugar Agreement was 350,075 long tons at the negociated price of £ 45–15s–3d per ton compared with the 1961 price of £45–2s–Od per ton for 351,750 long tons. The remainder of the exportable sugars, amounting to 156,600 long tons, were exported on the free market, bringing the total of sugar exported to 506,623 long tons. Local sales amounted to 26,792 long tons, of which the Seychelles bought 355 long tons.

Sugar Exports

81. The exports of sugar were as follows :

Destination	*Long tons*
United Kingdom ...	423,235
Canada	52,180
U.S.A.	11,600
South Korea	9,889
Japan	9,719
Total ...	506,623

Molasses and Alcohol

82. The production of molasses amounted to 122,890 metric tons of which 76,801 tons were exported leaving a balance to be exported in 1963. About 8,000 tons of molasses were used in the manufacture of rum and various other alcoholic products and the balance as fertilizer. The total production of alcohol reduced to 100° G. L. was about 1,550,000 litres, the greater part of which was used locally as rum, denatured spirit, power alcohol and in the manufacture of vinegar. 18,352 litres of high strength alcohol were exported.

The Mauritius Sugar Industry Research Institute

83. The Institute provided the research services for the industry and undertook extension work amongst the larger farmers. The Department of Agriculture was responsible for extension work amongst small cane farmers. Close liaison was maintained throughout the year between the staff of both organisations and the research findings of the Institute were thus fully available to the small farmer. The work of the Institute is fully recorded in its annual report.

IX. Tea Industry

Tea Control Board

84. Since the Board was established under the Tea Industry Control Ordinance (Ordinance 29 of 1959 and Ordinance 29 of 1961) a number of Regulations have been framed and enacted. The office of the Board was transferred from the Department of Agriculture, Reduit, to the offices of the Tea Experimental Station at Wooton, Curepipe Road. Exhibits were prepared, together with an informative booklet on the Tea Industry, and presented at the joint stand of the Tea Control Board and of the Tea Division in the Mauritius and Overseas Trade and Industrial Fair, held in Rose Hill in August, 1962.

Legislation

85. Government Notice No. 77 of 1962 cited as Tea Industry Control (Amendment) Regulations 1962 adds to Regulation 8 of the principal regulations the proviso that the Schedule of payments for tea leaf need be certified only by one approved accountant.

Statistical

86. The Board continued to issue Quarterly and Annual Statistical bulletins and the new system of registration and licensing of tea properties, commenced in 1961, remained in operation. Information collected by the Agro-Economic Survey of small tea plantations was compiled and analysed during the latter half of the year and the report was submitted to the Chairman of the Tea Control Board in December. The total area under tea at the end of the year was 4,658 arpents.

Managing Agency

87. The Nuwara Eliya Tea Estate Company (Mauritius) Limited continued to operate as Government's Managing Agents in respect of Midlands Tea Estate and "Chartreuse" Tea Factory. The Factory itself suffered no structural damage from cyclones during the year. Leaf production at Midlands has been below expectation; in 1961, 1,023,765 lbs of green leaf were plucked from 404 acres and, in 1962, 1,057,088 lbs from 479 acres.

Climatic

88. Cyclonic weather combined with generally unfavourable climatic conditions throughout the year resulted in poor flushing of tea bushes. The rainfall for the year was 148 inches of which 70 inches fell during the first quarter.

Tea Factories

89. The factory at Mare Anguilles, operated by the Savanne Tea Industry and Land Investment Co. closed in June 1962 and went out of business. The other six factories continued normal production during the year.

Mauritian Teas

90. Although production was slightly below last year's figure, it was still considerably above local requirements and over half the crop was exported. The price of Mauritian tea on the export market remained fairly steady throughout the year at a little below the previous year's prices. 12,273 chests of Mauritian tea were sold on the London Auctions at an average price of 3s-11.2d per lb as compared with 13,225 chests at an average price of 4s-0.65d per lb in 1961. Very little tea was offered this year on the Nairobi Auctions but the sale of tea for export by private treaty continued.

Development Project

91. The tea development project, which was started in 1956 in the form of a government sponsored pilot scheme, designed to put 3,000 acres of new land under tea, together with proportionate increase in manufacturing capacity, continued to make progress. The project planters have gained experience with consequential increase in cultivation efficiency. The rehabilitation of plantations damaged by the 1960 cyclones was completed during the year. In 1962, the Mauritius Agricultural Bank extended its activities to tea plantations established on leased Crown Lands and granted loans of Rs 375 and Rs 750 per arpent for plantations planted in 1959 and 1960 respectively and Rs 1,500 per arpent for plantations planted from 1961 onwards. This has encouraged lessees, who have cleared some 200 acres of

land during the year; subsidies on 125 acres have already been claimed. By the end of the year, it was estimated that approximately 1,850 acres of the 3,000 acres had been cleared and planted including 300 acres of land which was planted by Government for subsequent distribution to small holders in 4-acre lots.

New Development Project

92. The aim of this project, which started in 1961, was to plant to tea 2,500 acres of Crown Land. Once established, the plantations will be divided into 4-acre lots to be distributed to small holders. By the end of the year, 600 acres had been contour-surveyed, 420 acres had been cleared and prepared, and 150 acres had been planted.

Tea Seed

93. Some 11,500 lbs of first grade tea seed of approved type were imported by air from Central Africa. 5,400 lbs of tea seed were harvested from the local seed nurseries. The yield was again disappointing but was expected as the trees were again affected by cyclonic winds early in the year. The seed nurseries at Salazie and Nouvelle Decouverte have been disappointing owing to their exposure to the prevailing winds. Windbreaks have been planted repeatedly but have not established satisfactorily. A new seed nursery on Crown Land de Rauville has been selected and cleared.

Tea Experimental Station—Wooton

94. As a result of wind damage in the first four months of the year and the generally unfavourable climatic conditions prevailling throughout the year, the total crop of green leaf at Wooton during the year 1961–62 (July to June) amounted to only 122,705 lbs, a considerable decrease in yield as compared to previous years. The comparative yields of green leaf from the 70 acres in bearing at Wooton for the months of December to June for 1961 and 1962 are given below :—

	Dec.	*Jan.*	*Feb.*	*March*	*April*	*May*	*June*	*Total*	*Last date of plucking*
	lbs	*lbs*	*lbs*	*lbs*	*lbs*	*lbs*	*lbs*	*lbs*	
1961 ...	54,586	54,761	49,618	44,441	33,540	19,737	8,363	265,046	26.6.61
1962 ...	20,366	23,550	34,139	14,977	17,223	4,028	906	115,189	5.6.62
Diff. ...	34,220	31,211	15,479	29,464	16,317	15,709	7,457	149.857	

Mature tea bushes were badly shaken several times by strong winds but very few of them were damaged beyond recovery. On the other hand, the shade trees, mainly *Grevillea robusta*, were either considerably damaged or uprooted.

95. The work on vegetative propagation of tea has had to be again curtailed because of cyclonic damage ; parent bushes produced very few shoots, consequently, the number of cuttings available for vegetative propagation was small. The selection of clones was continued and a few appear to be outstanding as regards yield and quality of made tea. The construction of a greenhouse at Wooton was commenced to house a mist propagator.

96. Fields were clean-pruned this year. Advantage was taken of this to clear fields of stones and tree stumps thus making more land available for tea. Two long-term experiments on different pruning cycles and three short term experiments on deep skiffing, light skiffing and fertilizer application were initiated with the object of determining their effects on yield and crop distribution. These experiments are being carried out simultaneously on the three jats, namely Local, Nyasaland and Malayan.

Area Planted to Tea

97. The number and acreage of tea plantations were as follows :—

Total number of plantations ... 386
Aggregate area ... ... 4,658 arpents
Area of mature plantations ... 2,492 ,,

Extent (arpents)	*Aggregate Area arpents*	*% of Total Area*	*No. of Plantations*	*Average Size arpents*
0 to under 5	504.8	10.8	329	1.53
5 to under 25 ...	269.0	5.8	28	9 61
25 to under 100 ...	1,079.4	23.1	19	56.81
100 and over	2,805.3	60.3	10	280.03
Total Area ...	4,658.5	100.0	386	12.05

The largest plantation under single management was 837 arpents; the second largest 558 arpents. There were 69 plantations of less than 1 arpent.

Production

98. Mauritius produced 2,799,627 lbs of black tea in 1962. No green tea has been manufactured since 1956. The output of factories over five years was as follows :—

Factory	*Year*				
	1958 lbs	*1959 lbs*	*1960 lbs*	*1961 lbs*	*1962 lbs*
Bois Cheri	651,560	654,545	563,408	959,233	861,731
La Flora	580,313	502,258	527,050	689,829	774,650
Usine Corson	309,086	332,523	282,040	426,365	426,803
Pont Colville	174,079	128,374	116,141	235,423	237,793
Nouvelle France ...	209,620	268,582	188,127	208,310	148,620
Chartreuse	—	110,821	56,109	230,215	266,892
Mare Anguilles ...	—	—	—	59,659	83,138
Total ...	1,924,658	1,997,103	1,732,875	2,809,034	2,799,627

99. The total export to all destinations were 1,589,216 lbs which compare with previous years as under :—

Destination	*1958 lbs*	*1959 lbs*	*1960 lbs*	*1961 lbs*	*1962 lbs*
United Kingdom	712,318	851,596	445,949	1,732,329	1,582,881
South Africa	28,572	112,832	10,505	2,443	977
New Zealand and Australia ...	25,052	—	—	426	—
Other Commonwealth Countries	499	—	—	11,432	—
Madagascar and Reunion ...	1,258	3,471	2,156	210	—
Western Europe	6,292	42,171	5,920	—	5.358
United States of America ...	—	49,401	—	—	—
Total Exports ...	773,991	1,023,471	464,530	1,746,840	1,589,216

100. Imports of tea were as follows :—

Country	Year 1958 lbs	1959 lbs	1960 lbs	1961 lbs	1962 lbs
China	4,580	6,163	7,781	7,327	10,190
Hong Kong	4,358	4,229	2,891	2,985	3,320
Ceylon	3,122	8,050	8,507	9,046	5,095
India	—	3,740	744	478	—
Other Countries ...	99	22	297	1,567	1,065
TOTAL IMPORTS ...	12,159	22,204	20,220	21,403	19,670

X. Tobacco Industry

101. Production of cured tobacco was limited to the estimated requirements of local cigarettes manufacturers, the British-American Tobacco Co. (M'tius) Ltd. and the Amalgamated Tobacco Corporation (M'tius) Ltd. The industry is controlled by a Board which publishes annually a full report on the industry.

CROP CONDITIONS

102. The Virginian varieties both at the beginning of the year and in the second half made good growth. The quality of the tobacco produced was better than in previous years. The Amarello flue-cured suffered intermittently from drought but the tobacco produced was nevertheless of good quality. The Amarello air-cured also suffered from drought in the early stages but the majority of the plantations recovered with the late rains.

The quality of the tobacco produced was about the same as in the previous year. The two strains of Burley, 11A and 11B, were again tried by growers ; the plantations were severely affected by drought, Mosaic and Mildew, thus resulting in a very low yield.

103. The incidence of Frogeye spot and Alternaria leaf spot was almost negligible. Rootknot nematodes were not as prevalent as in the previous year. Granville Wilt was reported from some localities, mainly on Amarello. Mildew was reported on one plantation of Burley at the beginning of the year, and three plantations of Burley in the second half of the year. Some plantations of Virginian varieties in the second half of the year were also affected. Spraying with " Karathane " gave very good control. Mosaic was more prevalent than in the previous years on Burley and Virginian varieties.

104. Insect pests were not as prevalent as in previous years, occasional outbreaks being controlled by spraying with the recommended insecticides.

ISSUE OF PERMITS

105. The issue of permits in 1962 with that of the previous year is compared in the following table :—

	1961 Arpents	1961 Kgs	1962 Arpents	1962 Kgs
Flue-cured Virginian	567.09	226,000	490	195,000
Flue-cured Amarello	111.26	108,000	78	75,000
Air-cured Amarello	137.94	115,000	105	100,000
Burley	.89		17	10,000
TOTAL ...	817.18	449,000	690	380,000

Permits for a smaller acreage were issued in 1962 owing to a decrease in consumption of domestic leaf resulting in an accumulation of stocks, following the revision of Customs and Excise duties on the 12th April 1960.

Production

106. The actual production is shown below compared with the 1961 figures :—

	1961		1962	
	Arpents	*Kgs*	*Arpents*	*Kgs*
Flue-cured Virginian	556	233,132	483	206,093
Flue-cured Amarello	109	105,265	78	64,382
Air-cured Amarello	136.91	165,272	104	96,725
Burley	0.89	700	16	4,538
TOTAL ...	802.80	504,369	681	371,738

Yields and Returns

107. The yield of leaf and the financial return to growers of flue-cured Virginian were higher than in 1961, the yield of flue-cured Amarello was lower than in 1961 but the financial return was higher. The yield and financial return of air-cured Amarello and of Burley were lower than in 1961. Purchase prices have remained unaltered.

	Average yield per arpent	
	1961	*1962*
	kgs	*kgs*
Flue-cured Virginian	419	427
Flue-cured Amarello	965	825
Air-cured Amarello	1,213	930
Burley	787	283

	Average return per arpent	
	1961	*1962*
	Rs	*Rs*
Flue-cured Virginian	2,417	3,103
Flue-cured Amarello	4,752	4,953
Air-cured Amarello	2,932	2,312
Burley	2,026	717

	Average value per kg	
	1961	*1962*
	Rs	*Rs*
Flue-cured Virginian	5 76	7 27
Flue-cured Amarello	4 92	6 00
Air-cured Amarello	2 42	2 48
Burley	2 57	2 52

Quality

108. The quality of the flue-cured tobacco produced was higher than in previous years, while the quality of the air-cured tobacco produced was similar to that produced in 1961.

	Percentage of Bright and Medium Grades				
	1958	*1959*	*1960*	*1961*	*1962*
Flue-cured	78	75	85	70	90
Air-cured	25	10	34	23	24

Local Manufacture

109. The manufacturers' purchases and usings of domestic and imported leaf were as follows :—

1962 Purchases	*Domestic kgs*	*Imported kgs*	*Total kgs*	*% Total Imported*	*C.I.F. Value per kg. Imported Rs.*	*C.I.F. Value per kg. Domestic Rs.*
B.A.T. Co. (M'tius) Ltd. ...	483,640.8	118,993	604,101.8	19.7	10.07	5.64
A.T.C. (M'tius) Ltd. ...	1,468.0					8.54
Total ...	485,108.8	118,993	604,101.8	19.7	10.07	5.66

A.T.C. (M'tius) Ltd., purchased Virginian flue-cured tobacco only.

1962 Usings	*Domestic kgs*	*Imported kgs*	*Total kgs*	*% Total Imported*	*C.I.F. Value per kg. Imported Rs.*	*C.I.F. Value per kg. Domestic Rs.*
B.A.T. Co. (M'tius) Ltd. ...	403,484.6	113,458.9	516,943.5	21.9	—	—
A.T.C. (M'tius) Ltd. ...	20,962.5	22,823.6	43,786.1	52.1	—	—
Total ...	424,447.1	136,282.5	560,729.6	24.3		

1961	*Domestic (kgs.)*	*Imported (kgs.)*	*Total (kgs.)*	*% Total Imported*	*C.I.F. Value per kg. Imported Rs.*	*C.I.F. Value per kg. Domestic Rs.*
Purchases ...	502,690.2	112,543	615,224.2	17.5	9.47	5.80
Usings	429,762.1	141,233	570,995.5	24.9	—	—

The percentage of imported leaf used in manufacture has decreased slightly in 1962 but it is still very much higher than in 1958, as shown by the following figures :—

Year	*1958*	*1959*	*1960*	*1961*	*1962*
% Imported ...	15.8	18.6	23.9	24.9	24.3

110. These figures indicate that the revised rates ot Excise duty imposed as from the 12th April. 1960. has resulted in a decrease in demand for local tobacco as the usings of domestic leaf have decreased. The average C. I. F. value of Rs 10.07 per kg. for imported Virginian leaf compares with Rs 7.94 per kg. for domestic Virginian. The average values of Amarello flue-cured and air-cured purchased by the British-American Tobacco (Mauritius) Ltd., were Rs 5.22 and Rs 3.32 per kg. respectively.

The duty on imported leaf was increased by Rs 5 per kg. as from the 1st June and the duty on imported cigarettes was also increased by Rs 2 per kg. as from the 14th December. It is hoped that these increases will result in an increase in consumption of domestic leaf.

111. Domestic Virginian blended with imported leaf is used in the manufacture of "Embassy", "Vogue", "Soirée", "Domino" and "Cabaret" brands of cigarettes which sell in competition with local cigarettes manufactured entirely from imported leaf, namely "Matinée" and "Mills" and imported Virginian cigarettes. Amarello leaf and some of the lower grades of domestic Virginian are utilised for the cheaper brands selling below the price range of imported cigarettes.

Imports

112. Imports of leaf and cigarettes for the last two years are tabulated below :—

	1961		*1962*	
	Kgs	*Value Rs*	*Kgs*	*Value Rs*
Cigarettes	20,017	412,297	20,873	415,732
Leaf				
Rhodesia	44,466	388,098	36,039	301,191
U.S.A.	67,068	671,767	82,945	896,595
India	1,000	5,692	—	—
Other sources ...	—	—	9	90
Total Leaf ...	112,534	1,065,557	118,993	1,197,876
Grand Total ...	132,551	1,477,854	139,866	1,613,608

113. Usings of domestic and imported leaf have decreased by kgs. 5,315 and kgs. 4,950.9 respectively compared with 1961, the percentage decrease in usings of domestic and imported leaf being 1.2 and 3.5 respectively.

Warehouse

114. The buildings suffered some damage in cyclone *Jenny* in February, repairs being completed by the end of May.

XI. Fibre Industry

115. The total production of Mauritius Hemp continued to be sold by the Mauritius Hemp Producers Syndicate to the Government Sack Factory for weaving into sacks used mainly for the bagging of sugar. Comparative statistics in connection with production were as follows:—

	1961	*1962*
No. of factories operating ...	12	12
Fibre produced (metric tons) ...	1,111	1,299
Value (rupees)	1,333,204	1,559,090
Area under aloe (arpents) :—		
Wild	6,735	3,040
Plantation	573	387

Sack Factory

116. This organisation is controlled by a Board which publishes annually a full report on its activities.

117. The factory purchased fibre produced locally and imported jute cuttings from India to the extent:—

	1961	*1962*
	kgs	*kgs*
Aloe	1,111,003	1,299,242
Jute	366,976	408,588
The carry over from 1961 was :–		
Aloe	119,935	17,958
Jute	82,044	84,918
The factory consumed : –		
Aloe	1,212,991	1,190,504
Jute	365,130	368,508
Excess in stock : –		
Aloe	110	315
Jute	1,028	—
Aloe Fibre sold	99	118
The carry over for the year was :—		
Aloe	17,958	126,993
Jute	84,918	124,993

In 1962 the prices paid for fibre were as follows:—

Aloe Fibre	*1961 Price per ton* Rs c	*1962 Price per ton* Rs c
Very Good	1,300 00	1,300 00
Good	1,250 00	1,250 00
Fair	1,225 00	1,225 00
Tow	1,000 00	1,000 00
Sisal	1,250 00	1,250 00
Cuttings	900 00	900 00
Ropes	900 00	900 00
Jute		
Hearts	1,681 33	1,101 44
Cuttings	1,278 48	711 03

The average price payable for aloe fibre was Rs 1,200 per ton and this will apply until 31st December, 1965,in accordance with the Tripartite Agreement signed by the Sugar Millers, the Mauritius Hemp Producers' Syndicate and the Government Sack Factory on the 23rd March, 1962.

118. The factory's output for 1962 is compared with that for 1961 below:—

	1961	*1962*
Sacks (6×8) Aloe	310,227 Units	400,736 Units
Sacks (5×7) Aloe-jute	602,656 Units	1,070,052 Units
Sacks (5×8) Aloe-jute	433,650 Units	—
Sacks (6×8) Aloe-jute	60,868 Units	—
Other Sacks	15,333 Units	29,389 Units
Filter Press Cloth	8,872 Yards	26,393 Yards
Other Fabrics	5,840 Yards	4,169 Yards
Yarns	16,849 Kgs	17,557 Kgs
Ropes	9,306 Kgs	10,260 Kgs

119. In 1962, the Government Sack Factory operated at a net loss of Rs 496,412.84 compared with a net loss of Rs 69,295.35 in 1961. This difference in the net loss arose directly from the lower selling price of the various types of sacks in 1962 which was Rs 1.49 for the 6×8 aloe sack and Rs 1.22 for the 5×7 aloe-jute sack compared with Rs 2.20 and Rs 1.79 respectively in 1961.

XII. Foodcrops

120. The following tables were prepared from data collected by the extension service :

(Area Harvested Arpents)

Year	Maize	Manioc	Arouilles	Sweet Potatoes	Groundnuts	Irish Potatoes	Beans and Peas	Pine Apple	Brinjal	Tomato	Ginger	Creepers	Mixed Vegetables	Total
1961	294	108	169	204	245	702	782	54	510	2,637	68	1,325	1,409	8,507
1962	317	145	131	250	338	840	900	58	500	2,500	134	1,149	1,412	8,674
Estimated Average Yield (Kgs Arpents)														
1961	612	2,833	3,213	3,284	1,159	3,135	816	3,796	1,371	1,225	5,441	5,164	4,024	
1962	700	3,480	3,671	4,451	1,011	4,500	1,200	3,393	1,076	2,712	6,000	7,000	9,000	
Estimated Total Production (Metric Tons)														
1961	180	306	543	670	284	2,201	638	205	699	3,231	370	6,842	6,208	22,377
1962	222	505	481	583	342	3,780	1,080	197	538	6,780	804	8,043	12,708	36,063

The area shown above is effective acreage and includes the aggregate acreages of different crops grown on the same land in one year, as well as foodcrops interplanted with sugar-cane.

XIII. Livestock

Milch Cattle

121. The programme of progeny testing bulls of the Creole milch breed was continued and additional basic data was collected. The two livestock breeding stations at Curepipe and Palmar carried a total of 284 head of stock of all ages of the Creole milch breed. Of these 24 were adult bulls, 59 young bulls, 12 bull calves, 85 cows, 81 heifers and 22 heifer calves. An average of 67.73 cows were in lactation during the year with a mean production of 6.25 kgs per cow per diem. There were 83 calvings yielding 43 males and 40 females. Twenty one heifers calved at an average age of 31 months. The average weight at birth of male calves was 31.4 kgs and that of females 28 kgs. Over a period of 305 days of lactation, first calves yielded an average of 5.25 kgs of milk per head per day, the second calvers 5.76 kgs and third calvers 7.88 kgs. Cows with more than 3 calvings yielded on average 7.5 kgs of milk per head per day.

Herd Cattle

122. With a view to providing improved sires to upgrade herd cattle. the livestock breeding station at Palmar carried 65 herd of cattle of all ages of the Ongole breed and 40 head of cattle of all ages of the recently imported Boran breed. As in the past, the Ongole proved a prolific breeder and there were 22 calvings, yielding 12 males and 10 females. The average weight at birth of male calves was 24.75 kgs and that of females 23.27 kgs. Seven heifers calved at an average age of 34 months and 25 days and 15 cows calved at an average calving interval of 14 months and 28 days. Six Ongole steers were sold as draught animals. The Boran herd did extremely well under the relatively dry conditions of Palmar and maintained very good condition in spite of poor quality fodder during the drought period. There were 13 calvings. yielding 9 males and 5 females. The average birth weight for male calves was 23.3 kgs and for female calves 24.7 kgs. The average calving interval of the cows was 14 months 14 days. Three young bulls were sold to breeders. One Brahman bull, originally imported from the United States, was purchased from an estate to improve the beef conformation of the Ongole animals at Palmar.

Pigs

123. An average of 60 large white pigs of all ages were held throughout the year at Curepipe station. There were 7 farrowings yielding an average of 11 piglets per sow. Owing to increased production of pigs both in Mauritius and in Rodrigues, the demand for young breeding stock fell by 50 per cent.

Goats

124. The flock of goats at Palmar comprised 60 head of all ages of Anglo-Nubians and 15 head of all ages of British Alpines. The latter have not done well under local conditions. There were 22 kiddings, 18 Anglo-Nubians and 4 British Alpines, yielding 47 kids. The average number of kids born per kidding was 2.3 for the Anglo-Nubians compared with 1.5 for British Alpines. The average weight of male Anglo-Nubian kids at birth was 2.29 kgs and 2.46 kgs for females compared with 3.25 kgs for both male and female British Alpine kids. The average kidding age for the Anglo-Nubian was 20 months and 20 days compared with 24 months and 20 days for British Alpines. An average of 10 goats were in milk during the year, yielding an average of 1 kg of milk per head per day. Selected Anglo-Nubian bucks were sold to goat breeders and bucks of this breed were also stationed at three District Headquarters. In addition, an Anglo-Nubian buck provided service for farmers' goats in the vicinity of Palmar station.

Rabbits

125. A rabbit breeding project was initiated early in the year at Curepipe to provide breeding stock, to encourage rabbit keeping for meat production on a cottage industry basis. Eighteen rabbits of four breeds were imported from the United Kingdom for trial, namely 6 Flemish Giants, 6 Chincilla Gigantas, 3 Californian Whites and 3 New Zealand Whites. Towards the end of the year the project was extended to Réduit to study the stock's rate of growth and other factors governing production under warmer climatic conditions. Weights of the parent stock when imported and at the end of the year are given below :—

Breed	*Weight on arrival on 2.5.62 (in lbs)*	*Weight on 31.12.62 (in lbs)*
Flemish Giant	5.28	6.64
Chincilla Giganta	3.76	6.17
Californian White	5.23	6.33
New Zealand White	5.50	8.45

Preliminary information from a very restricted number of litters is given hereunder :—

Breed	*Average No. born*	*Average No. weaned*	*Average weaning Wt. at 50 days (in lbs)*
Flemish Giant	7.3	5	1.24
Chincilla Giganta	7.7	10	2.25
Californian White	7.5	3.5	1.66
New Zealand White	3.5	3.5	2.67

Poultry

126. The poultry breeding project made notable progress during the year; a complete demonstration broiler unit including processing and packing plant was constructed and trials initiated with encouraging results. With this inducement, 3 local breeders undertook to produce and market broilers with young stock supplied from the poultry centre. For egg production, over 15,000 day-old chicks from progeny tested stock of various breeds were sold to poultry keepers; 1,000 pullets at point-of-lay, reared under the newly established open range system, were sold to poultry keepers in the villages under the aegis of the " Produce More Food Campaign ".

127. The poultry centre has encouraged producers and it is gratifying to record that imports of eggs from overseas has declined appreciably. In addition to providing breeding stock, the centre sold 55,827 eggs for table use during the off season and 7,800 lbs of poultry meat, both culls and broilers. The hybrid "404" has proved to be a valuable introduction and is proving very popular with producers. To encourage the production of family sized turkeys, foundation stock of Broad Breasted Bronze turkeys was imported.

Feeding Trials

128. A group of chicks fed on a ration containing 20 per cent groundnut meal grew more slowly than the control group, weighing two-thirds that of the control group.

129. High mortality among rabbits fed exclusively on concentrates occurred. Materials collected from the intestine and liver showed *Clostridium welchii*. The ailing rabbits had a high level of sugar in the blood and urine. They recovered completely when the concentrates were replaced by fresh greens and no further mortality has occurred.

130. A trial to assess the value of scums, a by-product of sugar manufacture, as part of stock ration was undertaken using milch cattle, pigs and rabbits. In the trial, cow feed was replaced by scums to the extent of 20 per cent of the ration with the following results:—

(a) No difference in milk production was found between the control and test groups.

(b) All other factors being equal, the cost of production per litre was lower in the test group.

(c) A digestibility trial revealed that ruminants are capable of digesting 70 per cent of the wax component of both scums and fodder.

(d) Rabbits are selective feeders and definitely rejected the scum part of the ration.

(e) In pigs, the trial revealed that 7.8 lbs of pig starter containing 20 per cent scum was required to yield an increase of 1 lb liveweight compared with 4.15 lbs of pig starter without scums. It was apparent that the scum part of the ration was not well utilized in this class of animal.

131. With the co-operation of the Agricultural Division, experiments to assess the value of night grazing in milch cattle were continued, grazing during daylight being impracticable on account of *Stomoxys* flies. Previous results were confirmed namely that cows maintained normal growth and production when grazing at night.

Housing

132. With a view to assisting stock breeders in the lower income groups, a deep litter pig sty was constructed and trials proved that pigs can be reared on deep litter. Apart from the low cost of the housing, it was found that the usual objectionable smell connected with pig sties and the breeding of flies was controlled in deep litter sties.

133. In the past, the Department has demonstrated low cost hygienic cowbyres holding one or two cows. With increased interest in livestock production, it was considered desirable to plan and construct for trial in rural areas an intensive livestock production unit and a prototype was nearing completion at Reduit at the end of the year.

Artificial Insemination Service

134. In spite of the shortage of trained staff, the policy of upgrading creole milch cattle, owned by peasant farmers, was successfully pursued through artificial insemination using selected bulls from the progeny testing programme. 11,282 inseminations were performed during the year with an overall improvement in the conception rate of 2 per cent. The campaign to improve the feeding of milch cattle with concentrates produced by the Livestock Feed Factory appears to have had some success in that there has been a continuing rise in the sales of stock feed by the Factory. The staff of the service participated in the " Produce More Food Campaign " and attended meetings at village centres and advised stock breeders through lectures and demonstrations.

Illegal Slaughter and Cruelty to Animals

135. Thirty-five cases of illegal slaughter were dealt with. In addition, assistance was given to the police in twenty-four cases of cruelty to animals,

Livestock Feed Factory

136. During the year, the demand for the factory's products again increased. Total sales rose from about Rs. 1,200,000 to Rs. 1,475,343. A new feed store has had to be constructed and another mixer installed to meet the increased demand. A pilot scum drier was built to dehydrate filter cake for use as a cheap source of protein in cattle feeds. The factory manufactured eighteen stock feeds using the following raw materials : maize, wheat, bran, pollard, fish meal, meat meal, lucerne, oats, bone meal, groundnut cake, cotton seed cake, wheaten flour, wheat grain, cod liver oil, molasses, vitamin supplements, salt, minerals and antibiotics. The campaign to encourage better feeding of stock and the policy of making available to the public balanced stock feeds at reasonable prices was maintained. The popularity of these feeds continued to rise as evidenced by the continuing increase in sales. Prices were maintained in spite of a general upward trend in the prices paid for raw materials. 3,719 tons of feeds were sold during the year compared with 3,058 tons in 1961, 2,140 tons in 1960, 1,350 tons in 1959 and 800 tons in 1958.

Formulation of Feeds

137. As at the end of the year, the following feeds were available from the Livestock Feed Factory :—

(a) Feeds for Milch Cattle : —

(i) Cowfeed : protein content 22 per cent sold at Rs 330 per metric ton
(ii) Cow Foed (cubes) : protein content 22 per cent sold at Rs. 340 per metric ton
(iii) Bull Feed : protein content 22 per cent sold at Rs. 400 per metric ton
(iv) Calf feed : protein content 21 per cent sold at Rs. 460 per metric ton

(b) Feeds for Beef Cattle ;—

(i) New Cattle Feed : protein content 22 per cent sold at Rs. 240 per metric ton
(ii) Cattle Fattening Feed : protein content 20 per cent sold at Rs. 380 per metric ton

(c) Feeds for Pigs :—

(i) Pig Grower Feed : protein content 15 per cent sold at Rs. 350 per metric ton
(ii) Pig Starter : protein content 18 per cent sold at Rs. 380 per metric ton
(iii) Creep Feed : protein content 24 per cent sold at Rs. 500 per metric ton

(d) Feeds for Poultry :—

(i) Chick Feed : protein content 22 per cent sold at Rs. 510 per metric ton
(ii) Poultry Feed : protein content 16 per cent sold at Rs. 440 per metric ton

(e) Other Feeds :–

(i) Horse Feed : protein content 14 per cent sold at Rs. 400 per metric ton
(ii) Special Horse Feed : protein content 12 per cent sold at Rs. 420 per metric ton
(iii) Mineral Mixtures at Rs. 360 per metric ton.

XIV. Animal Health

Veterinary Aid Service

138. Over 1,700 pregnancy assessments were made, 269 cases of infertility were dealt with and 510 calves were safely delivered in spite of malpresentation. In addition, 2,732 other cases of digestive disorders, mastitis etc. were treated.

Advisory Service

139. Apart from the field staff who had been advising stock-owners on feeding and management problems whilst attending artificial insemination and veterinary aid cases, the Veterinary Officer, the Animal Husbandry Officer, the Poultry Officer and the Laboratory Technologist received and advised a large number of breeders in their respective fields of work. In addition these Officers attended meetings of the " Produce More Food Campaign ".

Animal Quarantine

140. In compliance with the provision of the Animal Diseases Ordinance, 904 import permits and 472 landing permits were issued ; 21 aircraft and 56 boats bringing livestock or livestock products into the country were cleared. In addition, 32 aircraft were spot checked to ensure that no livestock or livestock products entered the island without proper authority. Seventy-two Veterinary Certificates of Health were issued in respect of the export of 781,392 gallons of molasses and nineteen in respect of the export of dogs, horses and birds. 6,072 head of slaughter cattle were received at the Fort George Quarantine Station and 14 dogs passed through the quarantine kennels at Réduit.

Diseases

141. The health of cattle, pigs, goats, poultry and other stock at Departmental stations was good on the whole, thus providing optimum conditions for the successful implementation of the breeding programme. No new disease of livestock was recorded during the year and, comparatively, the animal health position in Mauritius remains unique.

142. Owing to strict sanitary measures, no cases of summer mastitis occurred amongst the milch cattle on stations and no mortality occurred owing to any infection amongst young stock.

143. The incidence of lameness in pigs, encountered in 1961, was much less during the year under review, comparatively few animals went down with this condition. Treatment with antibiotics and Vitamin B complex yielded satisfactory results.

144. The goats at Palmar bred satisfactorily. There were two cases of summer mastitis which did not respond to treatment.

145. Apart from sporadic cases of coccidiosis amongst chicks and lymphomatosis in growing stock, the health of the poultry breeding stock remained satisfactory.

146. Mortality among young rabbits was encountered due to coccidiosis and entero-toxaemia. Change in diet brought about a dramatic recovery of rabbits suffering from entero-toxaemia.

147. Canine distemper again flared up with the onset of summer and caused many casualties among unvaccinated dogs.

Laboratory Services

148. The new building for the Animal Health Laboratory was completed. Adequate modern facilities are now provided for disease investigation and the production of vaccines and sera. 3,210 post-mortem examinations were carried out on small and large animals, including poultry and cage birds. In addition, 8 faecal examinations were carried out and 32 insufficiently cured leather articles, imported by the public, were sterilised prior to release.

149. The laboratory also produced the following vaccines :—

Type	*Doses*
Newcastle Disease (live)	425,400
Newcastle Disease (inactivated) ...	91,200
Fowl pox	47,500
Swine Fever	1,000
Canine Distemper	4,300

XV. Land Settlement

150. The Land Settlement Committee held two meetings. Two other meetings could not be held through lack of a quorum. Various matters pertaining to conditions of tenure, selection of new tenants and transfer of holdings were examined.

151. Farmers have endeavoured to cultivate their holdings satisfactorily. Advice on the cultivation of crops and the use of fertilizers was given by the Officers of the Extension Service. On Bee Manique settlement, owing to rainy weather prevailing in the locality, the main problem has been weed control and farmers have experienced considerable difficulty in keeping their fields weeded. The foodcrop area, representing 25 per cent of the acreage leased to farmers, on many settlements was not fully utilised and requests continue to be received to the effect that tenants should be allowed to cultivate the whole of their holding under sugar-cane.

152. Rent collection was again unsatisfactory. Tenants have gradually paid their rents for 1961 but only a small amount of the 1962 rents was collected.

153. At Terre Rouge, the construction of a new masonry canal to replace an existing earth canal progressed satisfactorily, 750 feet of canal being constructed. The supply of irrigation water to this settlement was often irregular, owing to repairs to canals and shortage of water in the reservoir, with the result that the foodcrop area remained uncultivated for most of the year.

154. The tenants at the Vale, La Cave and Belle Vue have cultivated their holdings satisfactorily. Tenants of Belle Vue were authorised to plant the whole of their holdings to sugar-cane owing to the danger of soil erosion on the steep slopes of this settlement.

155. At Palmar, tenants who had abandoned their holdings have been replaced by new settlers. Owing to the prolonged drought, yields of foodcrops and vegetables were unsatisfactory. In view of the nature of the soil and the erratic rainfall distribution, it was decided to allow the tenants to plant the whole of their holding under sugar-cane, except for the sandy area and the land reserved for fodder.

156. Sixty-six holdings at Bee Manique were occupied. With the closing down of the scheme for the production of storable foodstuffs, all the land used for that purpose was leased to new tenants in lots of two arpents.

157. One hundred and eighteen holdings were occupied at Plaisance. Thirteen tenants vacated their holdings and eight new tenants were selected to occupy the vacated holdings. The land was leased solely for foodcrop production. In general, the tenants have not experienced a very successful year and a good number of them have not been able to meet production costs.

Relief Allotments

158. Four sections of relief allotments remained in operation. The allocation of land is summarised below :—

	No. of Allottees	*No. of huts*	*Acreage*
Curepipe	30	30	35
Bois Marchand Western ...	14	—	14
Elysee	38	—	38
Moona	6	6	12

During the year two allottees resigned at Curepipe. No materials for construction and repair were supplied to allottees. Five sections were given to the Central Housing Authority namely :—

Malherbes
Barkly Eastern
Barkly Western
Richelieu
Bois Marchand Eastern

XVI. Extension Services

Visits to Plantations

159. The main objective of the Extension Service has remained the improvement of the methods of crop husbandry, particularly that of small planters, so as to ensure higher yields and a greater cash return from the farm. More than 8,775 field visits were paid to growers and advice covering all aspects of the various crops grown including sugar-cane was tendered. The importance of timely control of pests and diseases, the use of more suitable and better varieties of crops, better fertilization and the application of soil conservation measures when necessary were stressed.

Demonstration Work

160. Ninety-five demonstrations were carried out on farmers' lands on the correct use of fertilizers on sugar-cane and other crops. Marked differences in yield in favour of complete fertilizers were again demonstrated. 143 demonstration sprayings were conducted on farmers' crops for the control of various pests and diseases and some 10 sprayings for the control of weeds.

161. Fifty one evening meetings of small farmers were convened throughout the island. Problems of agricultural interest were discussed and lectures on agricultural topics delivered ; the lectures being often followed by a film show. The main subjects discussed were :

(a) The use of complete fertilizers together with time and method of application to sugar-cane and other crops ;

(b) The control of pests and diseases ;

(c) Potato cultivation and preventive spraying against blight ;

(d) The better utilisation of available land.

Propagation and Distribution of Cane Varieties

162. Ten thousand two hundred canes of the new commercial varieties M 253/48, M 202/46 and M 93/48 were distributed to small growers. These canes were supplied from the propagation plots at the district demonstration centres.

Occurrence of Pests and Diseases

163. Bacterial Wilt and Late Blight remained the two major diseases affecting tomatoes and potatoes ; incidence of Late Blight was less, compared with the previous year. Powdery Mildew and Mosaic proved troublesome to squash plantations and other cucurbits. Attacks of the tomato borer, *Heliothis armigera* were widespread in the dry areas but were effectively controlled with insecticides. Mites and red spiders on chillies were of common occurrence but control measures, when applied, gave good results.

Foodcrop Growing in Cane Inter-rows

164. Owing mainly to the subsidisation of certified potato seed, a greater acreage of cane inter-rows was used for foodcrop production than previously. Some small cane growers inter-cropped their ratoon canes with potatoes, although such a practice is not recommended.

Permanent District Demonstration Plots

165. To cater for the demands from villagers for planting material a higher proportion than usual of the demonstration plots was devoted to the cultivation of manioc, sweet potatoes, groundnuts, accacia and the most promising varieties of fodder grasses.

166. *Arsenal Demonstration Plot.*—4,022 kgs of foodstuffs were produced. 4,800 canes of the M 253/48 variety were distributed to cane growers and 15,400 kgs of cane were sent for milling. 20 perches were cultivated under the cane varieties M 253/48 and M 31/45. Twenty four orange grafts and some mangoes, custard apples, pamplemousses and avocados were planted. A cowshed, a poultry house and a goat pen have been erected and one silo pit has been dug and filled.

167. *Mapou Demonstration Plot.*—4,671 kgs of foodstuffs were produced and 3,800 canes of the variety M 253/48 were distributed to small cane growers. About 15 perches of land were planted to the cane variety M 31/45. The Anglo-Nubian buck was removed from the station owing to senility and was replaced by a she-goat which gave birth to two kids. Eighteen orange grafts of four different varieties were planted and seeds and fruit trees were on sale.

168. *Vacoas Demonstration Plot.*—Vegetables and foodcrops were intensively cultivated and 19,320 kgs of foodstuffs were produced.

169. *Riviere des Anguilles Demonstration Plot.*—10,641 kgs of foodstuffs were produced and 1,234 canes were sold as planting material to small cane growers. The cow kept at the station gave birth to a heifer. A young Anglo-Nubian buck was stationed for service and a pair of rabbits were kept for demonstration purposes. Vegetable seeds and fruit trees from Barkly Experiment Station continued to be on sale throughout the year.

170. *Central Flacq Demonstration Plot.*—7,283 kgs of foodstuffs were produced. The cane propagation plot was uprooted and replanted to the following varieties : M 253/48, M 202/46, M 93/98, M 31/45, and E 50/47. The silo pit, which was emptied in the middle of the year, was refilled. Towards the end of the year, the construction of offices and quarters commenced.

171. *Plaisance Demonstration Plot.*—2A67 were planted with budded oranges and four arpents holed for letchis and coconuts. Seventeen different varieties of onions were cultivated ; seven of the most promising varieties were resown for further investigation of yield and quality. Some 19,744 kgs of foodstuffs were produced, 450 canes were distributed to planters as planting material, 58,320 kgs of canes were harvested, 3,715 kgs of maize were sent to Richelieu Experiment Station. 551 kgs of onions, 1,768 kgs of tomatoes, 380 kgs of bean seeds and 380 kgs of onion sets were sent to Barkly Experiment Station. A cow and a young Anglo-Nubian buck were placed on the station.

Cyclone Relief Assistance to Small Growers

172. Vegetable seeds were issued free to bona fide vegetable growers whose plantations had suffered from cyclones. About 1,250 vegetable growers availed themselves of the assistance and were thus able to replant their fields soon after cyclone *Jenny*. As a result, there was a good supply of fresh vegetable in the markets within the shortest possible time after the cyclone.

Control of Soil Erosion

173. Some 12 arpents of steep land were contour-staked for sugar-cane planting. Contour planting on sugar estates was observed to be on the increase.

Radio Talks

174. The following broadcast talks were given by officers of the Department:—

No. 1	Rapport preliminaire sur l'utilisation des tourteaux de filtres presses comme aliment pour les animaux	S. Staub and A. Darne, DDAS
No. 2	The Establishment and Improvement of Pastures	S. Moutia, *Agronomist*
No. 3	Recent Developments in the Tea Industry of Mauritius	D. N. Andrews, *Assistant Tea Officer*
No. 4	Les methodes à employer pour maintenir saines les cultures maraichères	L. Orieux, *Plant Pathologist*
No. 5	Les insectes et la lutte biologique	A. Orian, *Entomologist*
No. 6	L'alimentation des animaux domestiques	C. Delaître, *Animal Husbandry Officer*
No. 7	Section de Vulgarisation Agricole du Service de l'Agriculture	K. Lutchmeenaraidoo, *Senior Agricultural Officer*
No. 8	La production des graines potagères à l'Ile Maurice	J. H. Julien, *Horticulturist*
No. 9	Un aperçu des travaux de recherches entrepris par les services Agricoles	B. D. Roy, *Senior Agricultural Officer*
No. 10	Chemistry in Agriculture	R. Burrenchobay, *Lecturer, College of Agriculture*

Miscellaneous Activities

175. The "Produce More Food Campaign" was extended to include seven new villages namely : Poudre d'Or, L'Escalier, Camp Diable, Bassin Road, Bel Air Rivière Sèche, Montagne Blanche and Case Noyale. Local Committees were set up in the new villages and regular visits were made by Extension Officers to all villages within the campaign. Some 764 fruit trees and 596 chicks were delivered to villagers. Planting materials of manioc, sweet potatoes, elephant and pangola grasses were also distributed. Four Anglo-Nubian bucks were sold to breeders. Leaflets on the breeding of fowls, rabbits and on the control of diseases affecting the main crops were prepared and distributed to breeders and growers.

176. Thirteen of the old silo pits were filled and four new ones were started. Cowkeepers showed less interest in silage this year because there was in general adequate green fodder due to favourable climatic conditions. Four silo pits built last year were abandoned owing to lack of interest by farmers.

177. Under the Potato Spraying Scheme, about 268 arpents of potato plantations were sprayed as a preventive measure against Blight. The demand for this service continued to increase and it has had the effect of encouraging planters to invest in their own sprayers for Blight and pest control.

178. The Scheme for the subsidisation of certified seed potatoes necessitated the registration of potato growers throughout the island. 600 tons of certified seed potatoes were issued on permits and the fields of growers were visited prior to and after delivery of permits to assess the exact acreage to be devoted to potatoes and subsequently to check whether seeds delivered had been planted. Some 750 arpents of potato fields were visited twice under this scheme.

179. Miscellaneous surveys were conducted including :—

(a) Assessment of Crown Lands for rental value and suitability for agricultural development.

(b) Assessment for compensation for standing crops on lands required by Government.

(c) Assessment of damage to plantations by cyclones.

(d) Assessment of damage done to crops by indiscriminate use of weedicides.

(e) Investigation of fodder problems.

(f) Collection of statistical data for acreage harvested under foodcrops.

(g) Submission of weekly returns of market prices.

XVII. Experiment Stations

Curepipe Experiment Station

180. Some small strips of land, totalling two acres, were cleared and planted with fodder. 1,535 feet of roads were constructed to facilitate access to the fields. A second goosehouse, thirty-one feet long and nine feet wide was built and the demonstration cowsheds, which were badly damaged by the cyclones, were repaired. Two hundred and forty five tons of sugar-cane tops were ensiled at the livestock breeding station. The capacity of the water reservoirs was increased to supplement the supply to the fishponds.

Fodder

181. Further observation trials on *Setaria sphacelata*, Bua River strain, *Chloris gayana*, Endebess strain and *Pennisetum purpureum* were carried out. The yield of each grass was greater from plots which received one hundred and fifty pounds of sulphate of ammonia per acre at each cut than from those plots receiving fifty or one hundred pounds of this fertilizer per acre. An application of two hundred pounds of sulphate of ammonia per acre at each cut gave the highest yield on some occasions, particularly on Elephant grass. It was evident that *Setaria sphacelata*, Bua River strain, was the best yielder of the grasses tested.

182. One of the disadvantages of *Setaria sphacelata* has been the cessation of growth in winter. It was observed in a few of the old *Setaria* fields that occasional stools showed vigorous growth during the winter months. Consequently, five hundred and sixty-nine of these stools were collected in August, 1961, and transplanted as individual stools in an observation plot. During the 1962 winter, all stools made good growth. Thirty-two outstanding stools were selected and planted in 10′ × 10′ plots for further observation, selection and bulking. The remaining five hundred and thirty-seven stools were planted out in a single field for fodder production and it is encouraging to note that this field of selected *Setaria* has yielded very well during the winter. The selected *Setaria* has shown greater promise than any other grass for winter production in the wet uplands.

183. An observation trial comparing the effect of different heights of cut (2″, 3″, 4″ and 5″ from ground level) on regrowth of *Chloris gayana* has indicated that this grass should not be cut below 4″ above the ground if satisfactory regrowth is desired.

184. Five new grasses were introduced in December and were planted in observation plots namely Slender Guinea grass, *Panicum maximum* var. Trichoglume, *Panicum coloratum*, Ermelo Love grass, *Eragrostis curvula*, Katambora Rhodes grass and Giant Rhodes grass.

185. In grazing trials on Pangola grass, *Digitaria pentzii*, Kikuyu grass, *Pennisetum clandestinum*, *Setaria sphacelata* and *Chloris gayana* carried out during the year under review, it was observed that the animals grazed more heavily on Pangola grass than on the other species.

186. Fodder was supplied to the livestock breeding station throughout the year and consisted of five tons per day of either grass from Curepipe or Plaisance Experiment Stations, or acacia, *Leucaena glauca*, from Plaisance or cane tops during the sugar-cane crop season. In the colder winter months, cane top silage was used to make good the shortage of fresh fodder.

Orchard Crops

187. The citrus orchards, established in 1957 and 1958, were again adversely affected by cyclones but were not as severely damaged as in 1960. Some Djercek Keprok Poenten Mandarin seedlings and budded Valencia oranges have flowered. Two apple plants of the variety Tropical Beauty were planted in June and are growing satisfactorily. The two strains of raspberry, Malling Jewel and Norfolk Giant, introduced in December, 1961, suffered from cyclonic winds in the first quarter and many of the plants died. The remaining plants made good progress and are suckering satisfactorily. The banana, guava and kaki plots were maintained.

Foodcrops

188. In a variety trial on beans with the eight varieties Long Tom, Oeil Precoce, Pioneer, Prolific Long-podded, Haricot Rouge local, Fin de Bagnol, Golden Queen and Victory laid down in October, the variety Long Tom was significantly the best yielder of green pods, followed by Victory and Golden Queen. There was no significant difference in yield of green pods between the latter three varieties.

189. In a yield trial on three varieties of pea comprising Greenfeast from South Africa, Greenfeast from Barkly Experiment Station and Local planted in October, the latter variety outyielded significantly the other two, producing nearly three times as many green pods as either of the other varieties.

190. With the object of determining the optimum period for growing garlic in the uplands, an observational trial was planted on a small scale at fortnightly intervals from April to June, and when harvested gave the following calculated yields per acre :—

Dated planted	*Dated Harvested*	*Yield/Acre (Kgs)*
10.4.62	20.10.62	2,263.8
25.4.62	20.10.62	6,468.1
8.5.62	26.10.62	6,114.9
22.5.62	26.10.62	4,043.6
4.6.62	23.11.62	2,910.6
19.6.62	6.12.62	1,034.9

It would appear that the best yields can be expected from plantings made within the first fortnight of May.

191. Investigations on the possibility of producing the winter vegetables Cauliflower, Broad Bean and Lettuce in the uplands in the off season, initiated in November 1958 were continued. The results obtained in 1962 have confirmed previous findings namely that Cauliflower and Broad Bean can be produced beyond November in the uplands, as long as precautionary measures are taken against drought, insect pest and diseases. It also appeared that cauliflower seedlings, transplanted in soil blocks produce more marketable curds than when seedlings are raised on beds and subsequently transplanted.

192. In a groundnut variety trial including the varieties Mgongo, Manipintar, Cabri, Gudiyathan, AR 24/11, AR 48/38 and AR 28/206, planted in February and harvested in June the varieties Manipintar and Mgongo outyielded the others by 1,175 and 1,149 kgs/acre respectively, there being no significant difference between the two varieties. Cabri with 965 kgs/acre was the next higher yielder, AR 28/206 being the lowest yielder with only 120 kgs of fresh pods per acre.

193. Arouilles, *Colacasia esculenta*, ginger, maize, potato, squash, cucumber and other creepers are being grown for seed production.

Livestock

194. The flocks of ducks and geese were maintained and the peacocks and black swans appeared to thrive.

Reduit Experiment Station

Development

195. A field of two acres was cleared and bulldozed. Part of this area will be used to enlarge the plant introduction area, the remainder will be planted under avocado pear varieties.

Orchard Crops

196. The Marsh grape fruit and sweet orange trees suffered from a severe attack of citrus canker, *Xanthomonas citri*, affecting the leaves, twigs and fruits. Fortnightly applications of Bordeaux mixture and dry winter weather helped to reduce the severity of the attack. Sporadic attacks of mites, black aphids and *Cratopus* spp. were also observed necessitating in the later months of the year routine applications of Tedion and Sayfox at fortnightly intervals.

197. Fruit drop occurred to an appreciable extent in March and April with consequent reduction in yield of sweet orange varieties. Nevertheless, the following conclusions were drawn as regards fruit quality and yield:—

(a) The Navel Orange, though a shy bearer, produced the best quality fruit, both in flavour and sweetness.

(b) The Parson Brown Orange is a good bearer and the fruit is of good quality with a rather thin rind.

(c) The Valencia orange is a late variety yielding abundantly, the fruit tends to be acid with a thick rind.

The bulk of fruit of the above varieties was harvested from trees that had been grafted on Florida Rough Lemon stock. Those grafted on Waterkloof sweet orange and local mandarin stocks were unproductive. All varieties of tangerines, whether used as stock or as scion, suffer from a disease complex which eventually results in the death of the tree.

198. About 75 budded orange trees were planted in the course of the year to replace dead or damaged trees. The spacing was standardised at 25′ × 25′. A long term fertilizer trial with four treatments in three replicates was laid down on a newly planted budded Navel Orange plant on local Citron galeux stock. Another fertilizer trial was laid down on six-year-old sweet orange trees of the Valencia and Parson Brown varieties. A similar fertilizer trial was laid down at Plaisance Demonstration Plot with the orange varieties Washington Navel. Valencia and Parson Brown on Citron galeux stock. All sweet orange varieties blossomed well and a heavy crop is expected in 1963. Among the 7/8-year-old seedlings, Java grape fruit, Seminole Tangele, *Djereck Deprek Poenten* mandarin and Empress mandarin have flowered for the first time and have set fruit. The deficiency symptoms reported in earlier reports were still apparent though to a much lesser extent than in earlier years.

199. A strawberry variety trial was laid down to compare four of the varieties introduced in 1959 from Kenya with the local variety. Transplanting was done on May 14th, which was rather late in the season and resulted in erratic flowering.

200. The Banana collection of nine local varieties as well as the two blocks of Naine and Ollier varieties were badly damaged by cyclone *Jenny*, though Naine and Ollier, being dwarf varieties, suffered less. Recovery has been satisfactory and, by the end of the year, several varieties had started to fruit.

201. Three grafted apple plants of the variety Tropical Beauty, introduced from Australia, were planted and are doing well.

202. Forty plants of *Solo* papaw from Hawaii were planted out in a mixed orchard.

203. A new plot of 100 plants each of the *Excelsa* coffee from local seeds and *Arabica* from Kenya was planted at 10 feet by 10 feet. It is proposed to interplant with bananas to provide shade and a windbreak.

Grass and Fodder

204. The trial with the four strains of Elephant grass, *Pennisetum purpureum* started in July, 1960, was continued and preliminary results show that :—

(a) strain 1 yields as much fresh herbage and dry matter as the ordinary unselected strain but strains 2 and 3 are significantly inferior.

(b) The percentage of crude protein on a dry matter basis does not vary much between the four strains and is not consistent at all cuts. The percentage varies between 8 and 14 depending on intervals between cuts and the season of the year.

205. A 4 × 4. latin square, phosphatic fertilizer trial on Rhodes grass, *Chloris gayana*, Endebess strain, was started in May with three rates of triple superphosphate 1, 2 and 3 cwt per acre per annum with a control. All plots received a basic dressing of 50 lbs of sulphate of ammonia per acre after each cut and 100 lbs of sulphate of potash per acre per year. Five cuts were taken during the first six months of the experiment and results to date indicate that there is no response to phosphate either on yield of fodder or on protein content of the pasture.

206. The effect of nitrogen fertilization on the yield of the Pangola grass, *Digitaria pentzii*, is also being investigated. The treatments are control 20, 40 and 80 lbs. N per acre after each cut with a basic dressing of 1 cwt of superphosphate and 1 cwt of muriate of potash per acre per annum. Only two cuts were taken during the first six months of the experiment but differences between treatments were very marked as shown in the following table :—

Treatment	*Yield kgs acre for 2 cuts*
Control	3,033.64
20 lbs of N/acre	5,725.03
40 lbs of N/acre	6,720.69
80 lbs of N/acre	12,134.57

207. Locally collected seeds of Endebess Rhodes grass, showed extreme variability when sown in a field planted to Pangola grass, *Digitaria pentzii*, and *Leucaena glauca*. Individual clumps were very variable in size of leaf, height and habit of growth. A selection of the most leafy clumps was made for propagation and observation.

208. The most promising species introduced in 1961 are *Panicum maximum* variety Trichoglume slender guinea grass, *Panicum coloratum*, *Setaria sphacelata* variety Nandi and *Cenchrus ciliaris*, varicty Biloela. Slender guinea grass appears to be resistant to drought and grows very well in winter, though it tends to flower profusely at that time.

209. The most promising species of grass introduced in 1962 was *Chloris gayana*, Rhodes grass variety Giant. Planted in October, a period of three monihs of growth had produced a luxuriant growth 4–5 feet tall, smothering all weeds very effectively. Giant Rhodes grass is also doing very well on the sandy soils of the Palmar Station.

210. Among the legumes introduced prior to 1962, *Mimosa invisa*, variety Inermis was most promising as a cover crop. It was very vigorous, producing a large quantity of green material very rich in crude protein, up to 20 per cent on a dry matter basis. Siratro *Phaseolus atropurpureus*, introduced last year from Australia, was also very promising but was unfortunately very prone to attacks of the leaf tier, *Nacoleia praeteritalis*.

211. The legumes *Lotononis bainesii* and *Desmodium intortum* were introduced from Australia and have grown well under various conditions. The association of both species with grasses will be of interest.

212. The five strains of *Leucaena glauca*, introduced in 1961, are being compared with the local strain in a replicated variety trial and there are indications that at least one of the strains, Peru, is outyielding the local strain.

213. Other introductions have been *Stylosanthes sundaica*, Townsville lucerne, and *Trifolium repens*, Ladino white clover, from Australia, *Alysicarpus glumaceous*, Alyce clover, from Nigeria, *Hyparrhenia rufa* from Uganda, Poona Cowpea from Queensland, *Panicum maximum* var. *Makarikiensis*, *Eragrostis curvula* and *Chloris gayana* var. *Katambora* from Southern Rhodesia.

Foodcrops

214. A variety trial on 22 varieties of Cassava was severely affected by cyclones *Beryl* and *Jenny*. The best varieties were Manioc de Table, Nestor, Manioc Blanc, Australia No. 29, Constantin, Burreum, Icery and Trinidad II. The first six varieties have been included in another variety trial. Plots of four varieties of yams and five varieties of sweet potato were maintained to provide planting material to the public. Seeds of the following vegetables were produced: bocklah, beetroot, carrots, calebasses, cauliflower, citrouilles, cowpeas, lalos, leeks, petsai, pipangaille, rave and squash.

215. A variety trial on groundnuts was somewhat affected by flooding during cyclone *Beryl*. Variety Manipintar was again the highest yielder, the local variety Cabri not being significantly lower. Another variety trial has been laid down with the following varieties: Manipintar, Makulu Red, which is a mutant of Manipintar but with a red seed coat instead of being variegated, Gudiyathan, Cabri, G 71 and G 72.

216. Two variety trials on potato again showed a high degree of infestation with *Pseudomonas solanacearum*. King George was the highest yielder with BP 1 and Suzanna not significantly inferior.

217. Two hybrid maize varieties, Kitale Synthetic II and Taboran, from Kenya were compared with the local selection. The following yields were obtained:—

Variety	*Kgs of dry seed (at 10% humidity) per acre*
Kitale Synthetic II	1936.37
Taboran	1279.58
Local selection	1260.97

Kitale Synthetic II yielded 50 per cent more than the local selection. Taboran yielded as well as the local selection but was otherwise interesting in that it was a short term variety with a crop cycle of $3\frac{1}{2}$ months whereas the others have a crop cycle of $4\frac{1}{2}$ months; it was also drought and wind resistant.

218. The effect of nitrogen on the yield of cauliflower was investigated with the following results :—

Treatment	*Mean Yields per Acre*		*Mean Circumference of curd (inches)*
	Total Weight (kgs)	*Curd Weight (kgs)*	
Control	8,994.3	2,081.2	17.26
15 Kgs N/acre	13,249.5	3,172.9	19.73
30 Kgs N/acre	15,498.1	4,869.6	24.13
45 Kgs N/acre	18,351.7	6,130.7	24.95
60 Kgs N/acre	17,699.6	5,972.0	25.82

45 kgs N per acre appeared to be the optimum dressing yielding significantly more than 30 kgs per acre ; 60 kgs per acre depressed the yield and produced an increase in the diameter of the curd.

219. Three important varieties of cabbage, Drumhead, Kopkool and Rapidity were compared with the local variety in a replicated trial. The yields in kgs per acre are given in the following table :—

Variety	*Kgs/acre*
Drumhead	29,221.50
Local	28,102.25
Kopkool	16,486.25
Rapidity	12,069.75

Drumhead yielded as well as the local variety. Rapidity, although the lowest yielder, was an early variety, taking two months to reach maturity from seed, whereas the others have a crop cycle of three months.

220. Another variety trial was conducted on seven dwarf bean varieties, harvested as green beans. Long Tom was by far the highest yielder, followed by Pioneer and Prolific.

Barkly Experiment Station

Development

221. Eight acres of land, formerly under the control of the Prisons Department, were handed over to the Station raising the acreage of the Station to 45 arpents. The area was cleared and de-stoned and the irrigation system is being extended into the area. The fencing of 33 arpents of the Station was commenced. A new greenhouse is being built to accommodate a Mac Penny mist propagator.

Seed Production

222. The revenue derived from the sale of seeds practically doubled and is probably partly due to farmers growing more conscious of the benefits to be derived from using acclimatised vegetable seeds. Rs 8,300 worth of vegetable seeds were distributed to vegetable growers after cyclone *Jenny* by the officers of the Extension Service. This helped planters to re-establish the supply of vegetables on the market quickly. A total area of forty three acres on experiment stations was devoted to vegetable seed production. The sale of seeds and plants over the last three years is tabulated below :—

	1960	*1961*	*1962*
	Rs	*Rs*	*Rs*
Sale of seeds ...	28,136	22,647	40,118
Sale of Plants ...	9,273	15 041	14,932
Total ...	37,409	37,688	55,050

The price list for the sale of plants which had been in force since 1945 was revised, prices being reduced by 50 per cent to encourage planters to grow more fruit trees ; nevertheless, the revenue derived was nearly the same as that for the previous year. The Burgess mist propagator worked satisfactorily and helped to propagate thousands of plants to meet the ever increasing demand.

Citrus

223. Four thousand stocks of local rough lemon and Florida rough lemon imported from South Africa were planted in the nursery at Barkly. These stocks were budded from July to December. A total take of 55 per cent was obtained, the best results being in July. At the Royal Botanical Gardens, Pamplemousses, 1,200 Florida rough lemon seedlings were planted in February. These stocks were budded from July to December, the overall take was 65 per cent. The incidence of citrus canker in the nursery was found to be high on the rough lemon stocks.

224. The citrus plants in the Plaisance orchard were the best grown of all the orchards planted last year and a few plants were bearing a small crop of fruit. The Pamplemousses orchard was the next best but the plants have failed to flower. The plants at Barkly have grown satisfactorily ; 80 per cent of the plants flowered and some are bearing. Growth was rather stunted at Abercrombie. An additional two acres were planted with citrus at Plaisance during the year. Reduit orchard was recruited and part of it was replanted with oranges for experimental purposes. 664 budded oranges and grape fruit were sold to the public and over 700 were planted in orchards on stations.

Coconuts

225. Nearly nine hundred selected coconuts were imported from the oil islands. These were sown at Pamplemousses and Barkly and germination has been very satisfactory. Five thousand Malayan dwarf coconuts were ordered from Penang. These nuts were also sown at Barkly and Pamplemousses. About 600 seedlings will be planted on experiment stations and the remainder will be sold to the public.

Other Orchard Crops

226. Terraces which were formerly occupied by avocado pear and peach trees destroyed in the 1960 cyclones were planted with selected letchi strains. Sixteen Tropical Beauty apple grafts, imported from Australia were also planted. The grape variety Napoleon Chasselas, imported from Reunion island, has fruited. The quality of the fruit is generally equal to that of imported grapes. Two varieties of coffee, a local *Excelsa* strain and a *Coffea arabica* clone resistant to *Hemeleia* were planted on the station.

Open Day

227. An Open Day was held at the end of July. On this occasion all aspects of the horticultural work performed on the station were shown to the public. Demonstrations on seed sowing, preparation of composts, the making of pots from roofing felt and plastic tissue, preparation of soil blocks, potting, air layering and budding were carried out. In the fields, spraying demonstrations, the sprayline irrigation system and tractors were at work. Guided tours of the station were organised. The other divisions of the Department participated. Over 10,000 visitors attended, an unprecedented attendance for any open day so far organised.

ABERCROMBIE NURSERY

228. The mango orchard was maintained and has made satisfactory progress. The imported grape variety Napoleon Chasselas yielded excellent eating grapes of good quality.

THE ROYAL BOTANIC GARDENS, PAMPLEMOUSSES

229. The gardens were again badly hit by the cyclone *Jenny* which occurred in February. The damage caused to trees was different from that of preceding cyclones in that branches over four inches in diameter were torn off thus spoiling the canopy. The kiosks and bridges were repaired and the gardens were cleared of debris and trees pruned as necessary. Palm seeds were exported to other gardens and botanical institutions on an exchange basis. The nursery of the gardens has again been very useful in that some 12,000 ornamental shrubs were propagated to plant the centre island of the new trunk road. Eighty thousand visitors including tourists and school children visited the gardens.

Richelieu Experiment Station

Tobacco

230. Climatic conditions favoured the production of tobacco of good quality. All experimental and seed production plots were planted in April. The plots, in which disease resistance work was to be carried out, were planted in October as conditions are more favourable for a high incidence of Black Shank and Granville Wilt in summer.

Release of New Varieties

231. Of the three new varieties which were planted on a limited scale and under special permits by tobacco growers in 1961, Vesta proved to be the best as regards resistance to disease, yield and quality of leaf. In 1962, Vesta was issued freely to some growers who planted part or the whole of their quota with this variety. Results have been satisfactory and it is expected that a larger acreage will be grown under Vesta in 1963.

232. In 1961, the Tobacco Board approved the issue in 1962 of special permits for the planting of some twenty acres of Burley by growers of air-cured tobacco. As cyclone *Beryl* on 25th December, 1961, had destroyed most of the seed bearers of Burley at Richelieu, the stock of seed was very small. It was therefore decided to sow all available seed of the two varieties of Burley at Richelieu and to supply only seedlings to growers. The Burleys were planted in April in the three main tobacco districts and started well, showing high resistance to root diseases. In June, most plantations suffered from severe attacks of Mildew and Mosaic and the yields of leaf were reduced considerably. The varieties were again planted by four growers in July-August, but one plantation suffered from Mildew in November and the three others from drought, so that yields were only about 500 kgs per acre. Seed has been issued for early plantings in February-March 1963, and it is expected that the bulk of the leaf will have been harvested before the onset of Mildew in June. Karathane has given good results in the control of Mildew in Burleys at Richelieu.

Seedbeds

233. Seedlings were raised at Richelieu to supply the station as well as all Burley growers. A few growers of flue-cured Virginia were issued with seedlings from the station to enable them to complete their plantations.

234. The treatment of seedbeds with a nematocide, ethylene dibromide or sodium methyl dithiocarbamate, has become standard practice amongst growers. The use of Zineb, both for presowing treatment and for routine spraying, was also spreading. At the experiment stations, methyl bromide was still found to be the most efficient chemical for soil sterilisation. The field staff of a commercial firm was trained at Richelieu in the use of methyl bromide for seedbed sterilisation.

Fields

235. Breeding work and variety trials on disease resistance were continued. Three Burley varieties and nine Virginian varieties were planted in duplicate observation plots. They include two new introductions, namely Burley 37 and PD 611. All the varieties were showing considerable resistance to root diseases, except PD 611 which was susceptible to Black Shank. Burley 37 is a light type and flowers later than the other Burley varieties. PD 611 showed considerable resistence to nematodes, being very vigorous and late flowering. Crosses were made between PD 611 and the Black Shank resistant Yellow Mammoth. Assessment of leaf quality was also carried out on all varieties.

236. Tests were continued with various insecticides for the control of insect pests in the field. The incidence of *Heliothis* and other leaf eating caterpillars was always higher in the Burleys than in the Virginian varieties.

237. In 1960, tobacco plots were sprayed with various insecticides including metasystox, phosdrin, dimecron and DDT. It was found that the insecticidal treatments had no detrimental effects on the quality or grade of the tobacco produced. The various grades from each treatment were baled and kept at the Tobacco Warehouse for two years. At the end of 1962, the bales were opened and the tobacco reclassified. It was found that the bright grades had gone down considerably more in some bales than in others. The average values of the tobaccos before and after storage are tabulated below :—

Treatment	*Value of leaf*		% *Decrease in value*
	1960 Rs/Kgs	*1962 Rs/Kgs*	
Metasystox at 5 c.c. / litre	8.60	5.44	36.7
Phosdrin at 5 c.c. / litre	7.90	4.88	38.2
Dimecron at 5 c.c. / litre	7.41	5.80	21.7
Control DDT at 5 gm / litre	7.70	6.26	18.7

238. A randomised block variety trial with four replicates was planted in April with the Virginian varieties Yellow Mammoth, Vesta and Bonanza. A strong wind blew for three days from the 17th to 19th of May and did considerable damage to the experimental fields reducing yields. The results of the variety trial are shown in the following table :—

	Yellow Mammoth	*Vesta*	*Bonanza*	*Mean*
Yields kgs / acre ± 24.9	339	375	329	348 ± 14.4
Value Rs / Kg ± 0.30	7.29	6.13	8.07	7.16 ± 0.22
Return Rs / kg ± 2.25	2,460	2,300	2,670	2,470 ± 13.0

Vesta, a recent introduction, has given a significantly lower value of leaf per kg than the older established varieties Yellow Mammoth and Bonanza but as it was a slightly heavier yielder, there was no significant difference between the varieties in return per acre. The quality of Vesta should improve gradually with time as a result of selection.

Seed Production

239. The station is responsible for providing seed to all tobacco growers. Seed of all commercial varieties was produced by mass selection in fields at experiment stations. Seed was also obtained from an exceptionally good field of Yellow Mammoth in the district of Black River. In 1963, the seed requirements of Virginian varieties will be higher as a result of market trends necessitating the replacement of Amarello flue-cured leaf by Virginian leaf. The stocks of seed which had been depleted as a result of the cyclones of 1960 and 1961 have now been replenished. Seed is distributed by the Tobacco Board and is treated with silver nitrate before issue to growers.

Curing

240. Good quality leaf was produced throughout the island. Incidence of Frogeye spot was low. Mildew caused some damage to the Burley varieties which are very susceptible to the disease. At Richelieu, a single spraying of Karathane gave very good results in the control of Mildew.

Leaf Production

241. At Pamplemousses, a 2½ acre field was planted with the variety Yellow Mammoth and produced leaf of very good quality. Unfortunately, the leaves in the field were soiled by airborne ash from a nearby sugar factory and much leaf had to be discarded as unsaleable. A total of 703 kgs of leaf to the value of Rs. 5,760.18 was sold ; this represents an average value of Rs. 8.19 per kg of leaf.

242. At Richelieu, 5½ acres were planted under experiments and seed production plots of Virginian varieties. The strong winds in May caused the loss of a fair amount of leaf. 1,364 kgs of leaf to the value of Rs 9,757.60, an average value of Rs. 7.16 per kg of leaf, were sold. One and a half acres were planted with Amarello for seed production and 1,463 kgs of leaf to the value of Rs. 8,488.76, an average of 5.80 per kg of leaf, were obtained from the field. This represents a gross return of Rs. 5,659 per acre. The 1¼ acres field of Burleys suffered from the wind and from Mildew and only 353 kgs of leaf to the value of Rs. 899.22, an average of Rs. 2.55 per kg of leaf, were produced. From the October plantings of Burley, the value of leaf samples was Rs. 2.82 per kg.

Potatoes

243. A latin square spacing trial was planted with the variety King George, South African seed, in mid-June and was harvested at the end of August. The potatoes were planted in 3 ft. rows at intervals of 12 inches, 9 inches and 6 inches and also on beds at a spacing of 12 inches × 9 inches. Yields averaged 5.58 tons per acre but there was no significant difference between spacings.

244. A latin square variety trial was also planted at the same time with the varieties King George, Delaware, B. P. 1 Donny Brook and B. P. 1 K. L. K. Yields were fair and averaged 6.02 tons per acre but there was no significant difference between the varieties.

245. A 3×3×3 factorial potato experiment was planted in early July with the variety Delaware with three levels of manure, three fertilizer mixtures and three methods of placement of manure and fertilizers. Yields were low at 3.32 tons per acre and the experiment showed no significant difference between treatments.

246. A randomised block spraying experiment with four replicates, was carried out at the request of the Plant Pathologist, to test the effect of three spraying treatments on the control of potato Blight. The treatments consisted of high volume spray with a Neo Colibri sprayer, a low volume spray with a Motoblo motorised sprayer and a control with no spraying. The incidence of Blight was very low and there were no significant differences between treatments.

247. Seed of two varieties of potatoes, Tahi and Rua, were received from New Zealand in October and were planted at Richelieu. Tahi yielded 3.3 tons per acre, but Rua yielded only about 400 kgs per acre. Samples of 78 kgs of Tahi and of 27 kgs of Rua seed have been stored in an air conditioned room. Other samples of Tahi have been treated with 0 5 per cent Aretan and 0.2 per cent Captan Orthocide before storage to conserve the potatoes as seed for planting in March. The specific gravity and starch content of the potatoes at harvest have been determined and similar determinations will be made at the end of storage.

Other Crops

248. Dwarf beans were planted for seed production and yields were good. Some beans were planted in the cane inter-rows in the latter part of the year, but the December rains caused considerable damage to the pods drying on the plant and yields were poor.

249. A number of rice varieties were planted in a small swamp but failed to produce seed.

250. The crop of sugar cane was 573 tons, harvested from about 25 acres.

251. Further plantings of the Pangola grasses, *Digitaria pentzii* and *D. decumbens* were made. Planting material was distributed to planters. A leafy strain of Elephant grass has also been propagated and planting material distributed. Observation plots of a number of new grass introductions were also planted.

252. The citrus orchard was completed by planting budded varieties of oranges. Florida rough lemon was also planted along the fence to serve as a source of seed. Some Florida rough lemon trees, planted as seedlings in 1957, have borne fruit for the first time.

Mechanization

253. A Massey-Ferguson maize/peanut planter was received and has proved very useful. A heavy duty reversible disc harrow was used for interrow work in cane fields and has proved to be a very efficient tool for cultivation, earthing up and making irrigation furrows.

Dairy

254. All the remaining dairy cows were sent to Rodrigues and 16 heifers were bought from local cowkeepers. No dairy cows are kept at Richelieu, pregnant animals being sent to Curepipe Livestock Breeding Centre two months before calving.

XVIII. Plant Pathology

Tobacco

255. Brown spot, *Alternaria longipes*, was not observed during the year. Frogeye spot, *Cercospora nicotianae*, was observed on lower leaves but did not build up. Black Shank disease was absent in all tobacco districts. The unusual incidence of root diseases on Amarello was investigated and revealed that Granville wilt, *Pseudomonas solanacearum*, can be destructive on this variety. The disease was particularly severe on plantations at Flacq where tobacco is grown in the same fields for several years in succession. The newly released Burley varieties proved susceptible to Mosaic in most localities during the winter months. Plantations showed 20 to 100 per cent infection. The disease was found to be more severe in young plants, symptoms being mottling, leaf scorch and stunting. The varieties were also severely affected by Powdery Mildew, *Erysiphe cichoracearum*, in some districts. Growers were advised to spray with Karathane.

256. There was no incidence of Rootknot nematode in Vapam treated beds as occurred last year. This incidence had been due to a water supply which had been contaminated by uprooted egg plant bushes infected with nematodes and dumped near the water supply.

Tea

257. A root and stump disease of tea plants was attributed to *Armillaria* sp. The disease had spread to tea plants from pine roots left in the soil after clearing the land and which were also found to be infected with *Armillaria*. In a trial to check the spread of *Armillaria* root rot, a soil drench with the sterilant Vapam was applied around established plants in an infested patch. At the concentration used, namely, $\frac{3}{4}$ litre of Vapam to 2 gallons of water, the drench was not phytotoxic to tea plants, some of which have since recovered. A fungus causing a root disease of tea of lesser importance than *Armillaria* was identified as *Poria* sp.

258. Tea seeds which failed to germinate and develop properly in coral sand seedbeds had brown lesions in the cotyledons heavily infesfed with nematodes. New sand and a change of site for the seedbeds were recommended.

259. Deaths of young *Tephrosia* plants, a leguminous shrub used as a windbreak in young tea plantations, were attributed to defoliation following a leaf spot due to a *Phyllosticta* sp. and caterpillar damage. Fungicide sprays were recommended.

Potato

260. Seed potatoes from the previous season, stored at Richelieu, gave a satisfactory stand of about 50 per cent. A fungicidal trial was laid down to compare medium and high volume sprayings of Zineb for the control of potato Late Blight, *Phytophthora infestans*. The two rates of application were found to be equally effective in controlling the disease at the same level of two lbs of Zineb per arpent. Late Blight was observed up to late December at Curepipe.

Maize

261. There was little rust on maize harvested in March, in spite of the cyclone which occurred in late December 1961. Pink ear rot and stalk rot of maize, *Fusarium* sp., a new record for Mauritius, occurred at Réduit and Curepipe Experiment Stations.

Tomato

262. Following cyclone damage, tomato plantations produced new vegetation which succumbed rapidly to Grey leaf-spot, *Stemphylium solani*, in fields not treated with Zineb or Maneb ; Bacterial wilt occurred in some areas. Late Blight was controlled by spraying during the winter but overproduction and low prices discouraged treatment against leaf spot during the summer.

Groundnut

263. The local variety Cabri and Gudiyathan showed great susceptibility to leaf spots caused by *Cercospora* sp., and had more than 50 per cent defoliation when plots of other varieties, in the same trials at various stations, showed very little spotting. The cause of poor stands of groundnuts in some localities was investigated. Pre-emergence rot and collar rot of groundnut seeds at Réduit were found to be caused by the fungus *Macrophomina phaseoli* Ashby. The disease was particularly severe in December. Root and Collar rots of groundnuts caused by *Aspergillus niger* and *Sclerotium rolfsii* were also very common. Grafting experiments performed at Réduit for the identification of Rosette virus disease did not confirm the presence of the virus in Mauritius. Contrary to Rosette disease, the yellowing and crinkling of leaves of groundnut observed in Mauritius has had no serious effect on yield.

Cassava

264. A root disease of Cassava occurred at Triolet with the fungus *Botryodiplodia theobromae* Pat. in association.

Beans

265. A root and stem disease of beans caused by *Rhizoctonia solani* was widespread in several fields at Black River. Rust, *Uromyces appendiculatus* and Angular Leaf Spot, *Isariopsis griseola* were common on all bean varieties in September.

Peas

266. Powdery Mildew, *Erysiphe polygoni*, of peas was more successfully controlled with Karathane than with Phaltan. In a trial at Reduit, using Karathane as spray and dust, the spray was found to be more satisfactory.

Brassicæ

267. Black Rot, *Xanthomonas campestris*, was severe in July and August and caused appreciable damage in some districts.

Cucurbits

268. A severe form of cucumber mosaic virus was reported from many localities in February. Fruit rot of *Sechium edule* caused by *Phytophthora parasitica* was common in a few localities, following cold rainy periods. Fruit rot of pumpkin, common in August, was found to be caused by *Mycosphaerella melonis*. Downy Mildew, *Pseudoperronospora cubensis*, was severe on European varieties of squash, cucumber and pumpkin. Local strains of those cucurbits were unaffected. On Melon, Leaf Mould, *Cladoporium cucumerinum*, reported to be destructive in many countries, was recorded for the first time. On Watermelon, a wilt with a *Fusarium* sp. in association was recorded in December at Plaisance.

Other Vegetables

269. Winter plantations of chillies were again severely infested with Mildew, *Leveillula taurica*. The yield from small chilly plantations was considerably lowered owing to the combined effect of Mildew, *Leveillula taurica*, and the broad mite, *Hemitarsonemus latus*. Powdery Mildew was present in December.

Fruit

270. Citrus Canker was widespread on susceptible varieties following the cyclones. Pink incrustations on the cankers were due to *Fusarium* sp. and *Glæsporium* sp. as saprophytes. A Foot Rot of Florida rough lemon rootstock was under investigation ; histological studies have revealed the presence of abundant gummosis in the affected parts and a *Fusarium* sp. was isolated from all diseased plants. A Foot Rot of citrus trees of unknown cause, with *Botryodiplodia theobromae* in association, was recorded at Reduit.

Ornamentals

271. Die back of roses favoured by cyclone damage and unseasonal pruning was common. Several new fungi were identified from material forwarded to the Commonwealth Mycological Institute.

Filao

272. Several patches of diseased filao plants undergoing all stages of wilting were investigated. Some of the plants were affected by Bacterial Wilt, *Pseudomonas solanacearum*. On other plants, an abundant fungus flora was identified as *Trichosporium vesiculorum* and *Thyronectria pseudotrichia*, the latter being a new host record for Mauritius. Wilt had previously been recorded in the same localities. It would appear that water-logged conditions favour the development of this disease.

Miscellaneous Diseases and Fungi

273. The following were recorded for the first time in 1962 :—

On *Allamanda* sp. ...	Leaf spot ...	*Glomerella cingulata (Stonem.)* Spauld and Shrenk
On *Bauhinia* sp. ...	Rust	*Uredo* sp.
On *Cassava* sp. ...	Root rot ...	*Botryodiplodia theobromae* Pat.
On *Cassia accidentalis*	Leaf spot ...	*Cercospora nigricans* Cooke
On Cauliflower ...	Leaf spot ...	*Leptosphaerulina australis* Mc. Alp.
On Chilly	Dieback ...	*Phomopsis* sp.
On Coffee	Leaf spot ...	*Cercospora coffeicola* Berk and Cooke
On Coix	Leaf spot ...	*Mycosphaerella* sp. *Epicoccum nigrum* link
On *Cynanthium callialata*	Rust	*Hemileia* sp.
On Elephant grass ...	Rust	*Puccinia chaetochloae* Arth.
On *Eucalyptus* sp. ...	Leaf spot ... Powdery Mildew	*Mycosphaerella* sp. *Oidium* sp.
On Casuarina	Dieback ...	*Thyronectria pseudotrichia* (Schw.) Seeler in association
On *Flacourtia* sp. ...	Rust	*Catenulospora flacourtiae* Mundk. and Thirum.
On Groundnut ...	Seedling and Collar rot ...	*Macrophomina phaseoli* (Maubl.) Ashby.
On *Hevea* sp.	Dieback ...	*Phomopsis heveae* (Petch) Boedijn *Sphaerella heveana* Sacc.
On Jak. *(Artocarpus)* sp.	Leaf spot ...	*Glomerella cingulata* (Stonem) Spauld and Shrenk
On *Lagerstroemia* sp. ...	Leaf spot ...	*Mycosphaerella* sp.
On *Lantana camara* ...	Leaf spot ...	*Hansfordia* sp.
On *Lantana* sp. ...	Smut	*Graphiola* sp.
On *Ligustrum walkeri*	Dieback ...	*Haplaria* sp. in association
On *Lonicera* sp. ...	Leaf spot ...	*Cercospora* sp. *(Cercospora lonicericola* Yamanoto)
On Lucerne	Dieback ...	*Colletotrichum trifoli* Bain *Phomopsis* sp.
On Maize	*Parasite* of maize Rust *Puccinia polysora* Und.	*Eudarluca australis* Speg.
On Mango	Dieback ...	*Thyronectria pseudotrichia* (Schw.) in association
On Papaw	Dieback ...	*Colletotrichum* sp.
On Pine	Root rot ...	*Polyporus* sp.
On *Punica granatum*...	Leaf spot ...	*Cercospora punicae* P. Heun.

On Rose	Dieback ...	*Colletotrichum rosarum* Germans da Sousa
		Thyronectria pseudotrichia (Schw.) Seeler
		Curvuralia lunata (Walker) Boedijn
		Pestalotia eleandri Guba
		Botryodiplodia theobromae Pat.
On *Solanum indicum* ...	Wilt	*Phomopsis vexans* (Sacc. & Syd) Harter.
On Sorghum	Rust	*Puccinia purpurea* Cooke
On *Stachytarpheta jamaicensis*	—	*Phomopsis* sp.
On Tea	Root rot ...	*Poria* sp,
On Tobacco	Root rot ...	*Macrophomina phaseoli* (Maubl.)
On Typha sp. ...	Leaf spot and Stem spot	*Colletotrichum typhae* H.C. Greene

Control of Plant Diseases

274. A randomised block trial with three treatments and four replicates was carried out at Reduit for control of Bacterial Wilt, *Pseudomonas solanacearum*, on tomato. Treatments were as follows :—

(a) Effect of lime in the soil (pH 6.7 & 7.5; untreated soil pH 5.8),

(b) Applications of sulphur to kill bacteria in the soil,

(c) Applications of sodium nitrate in lieu of ammonium sulphate as fertilizer to reduce bacteria in the soil.

No significant results were obtained.

275. An alternative method of controlling Bacterial Wilt namely grafting tomato on *Solanum torvum* rootstock, known to be immune, was successful. Varieties resistant to Bacterial Wilt of tomato have shown promise.

276. A fungicidal trial was laid down to control mango Anthracnose, *Gloeosporium mangiferae* with the fungicides: Ziram, Captan, Phaltan and Thiram. Phaltan proved to be the most effective followed by Ziram and Captan.

277. The fungicide Ziram controlled Angular Leaf spot of beans, *Isariopsis griololi* satisfactorily.

278. The application of Thimet in association with Vapam gave no control of an unknown Pea Wilt in which a *Fusarium* sp. appeared to be associated with a mealy bug, *Dysmicoccus brevipes*.

279. Trials performed to control bacterial Black rot of cabbage, *Xanthomonas campestris* by heat treatment of seeds at 50°C for 20 minutes confirmed the efficacy of the treatment.

Plant Inspection at Airport and Customs

280. Trials with the Mallet fumigation unit using ethylene dibromide were performed. This gas was found to be toxic to fruitflies only at relatively high dosages at atmospheric temperatures and pressures while scale insects were unaffected. A three room quarantine greenhouse was completed.

XIX. Entomology

Biological Control of the Giant African Snail Achatina Fulica

281. The establishment of the predatory snail, *Euglandina rosea*, in the region of Reduit was safisfactory. Numerous individuals were recovered and, on two occasions, egg clutches were collected on the banks of the Le Reduit river. A request for an additional 5.000 individuals was made to the Commonwealth Institute of Biological Control at the beginning of the year but they were only able to send 250 in two batches. Two hundred of these were liberated in the drier localities of the island and the remaining 50 were put into a plot at Reduit with a view to multiplying these predators for subsequent liberation. They appeared to thrive and egg laying was observed on two occasions. The other predatory snail, *Gonavis quadrilateralis*, liberated at the beginning of the year has not yet been recovered.

Fruit Flies

282. In 1962, the incidence of fruit flies was severe on untreated plants of peach, mango and loquat. For the first time, *Ceratitis rosa* was bred out in large numbers from the wild guava, *Psidium cattleianum*. It would appear that the wild guava serves as an alternate host for *Ceratitis rosa*. The introduction of the parasites *Opius longicaudatus*, *O. concolor*, *O. oophilus* and *Dirhinus giffardi* from Hawaii and France was continued and liberations were made in orchards, tomato fields and areas infested with wild guava. No recovery of these parasites took place.

Biological Control of Oryctes Rhinoceros

283. The Indian Station of the Commonwealth Institute of Biological Control sent three consignments of the predator, *Scarites dubiosus* for the control of *Oryctes rhinoceros* in the coconut plantations of the Chagos islands. These beetles feed voraciously on *Oryctes* grubs. It was unfortunate that it was not possible to liberate them quickly in Diego Garcia as direct communications with this island has become very difficult. Hundred adults of the assasin bug. *Platymerus rhadamanthus* were also received in September from the Zanzibar Station of the Commonwealth Institute of Biological Control. These bugs feed on adults and larvae of *Oryctes* and they are reported to give good control of this pest in Zanzibar. The bugs are being bred in the laboratory on *Clemora* grubs prior to their liberation in Diego Garcia, scheduled to take place in February, 1963.

Biological Control of Weeds

284. The tingid, *Teleonemia scrupulosa* continued to give excellent control of *Lantana aculeata* in the drier localities of the island. In certain localities, its defoliating effect was helped considerably by the noctuid *Hypena stritatus*.

The Stable Fly, Stomoxys nigra Macq

285. Baytex continued to be very effective in controlling stable flies when applied as a wall spray. The use of Dieldrin to destroy the maggots in manure heaps helped considerably to obtain good fly control on farms.

Screening of Insecticides

286. Telodrin belonging to the chlorinated hydrocarbon group has become available being a stomach and contact poison with a residual effect of 3–5 weeks. It was tried against various pests such as *Cratopus* spp., *Brontispa limbata*, *Adoretus versutus* and *Papilio demodocus*, and results were always spectacular. The sorptive dust, Silikil, consisting mainly of finely divided amorphous silica gel was tried against white ants, cockroaches and other

house pests; control was generally satisfactory but it does not control dry wood termites. Folithion, a contact and stomach insecticide with good penetrative action and belonging to the organo-phosphorus group, gave promising results against scale insects ; its low mamallian toxicity will permit its use on edible crops. Ekatin, another systemic organo-phosphorus insecticide of very low mamallian toxicity proved very effective against the small fulgorid, *Stenocramus* sp. on coconut. Sayfos, containing the organo-phosphorus compound Manazon proved to be the best aphicide available. It was tested against various aphids and each time only one application was necessary to destroy completely these pests. Thimet,applied in the soil, proved to be very effective against scale insects and mealy-bugs on potted ferns and African violets.

Miscellaneous

287. The cutworms, *Prodenia litura* and *Plusiae* sp. were recorded for the first time on watercress. Severe attacks occurred at Bassin Estate but these were successfully checked by several applications of Phosdrin. *Brontispa lmbata* was again troublesome on palm trees but was very easily controlled by either DDT, Dieldrin or Telodrin. The tomato fly, *Pardalaspis cyanescens* seriously affected tomatoes, mainly in the south of the island, where planters were not using much insecticide. In the north this pest was controlled very efficiently by Lebaycid and Dipterex. Peach, loquat and mangoes were severely attacked by the Natal fruit-fly, Ceratitis rosa and only those orchards which were treated with Lebaycid or Dipterex obtained a satisfactory harvest. The Fulgorid, *Stenocranus* sp., caused some damage to young coconut palms. The pest was successfully controlled with Rogor and Metasystox. The mango borer, *Batocera rufomaculata*, continued to be a serious pest of the mango tree, *Ficus nitida*, *Ficus benghalensis* and *Ficus carica*. The pentatomid bug, *Bagrada hilaris*, observed for the first time in 1961 on crucifers, was very rare.

Modernisation of Equipment

288. A D-Vac Vacuum insect collector was received. This unit will be of considerable value in plant protection enabling earlier warning of the build up of pests to be obtained to permit insecticide applications before the pests become numerous enough to cause economic damage. A fog generator, DYNA-FOG, was also available ; it is equipped with twin fogging engines working either simultaneously or independently of each other and will be used for disinfection of stores and granaries, for the control of certain pests on fully grown tobacco and in orchards. A Cholinesterase test kit was also received.

289. A new insectarium was built with a room kept at constant temperature and humidity. This will enable the propagation of fruit fly parasites in the laboratory for release in the fields.

290. The collection of insects was continued and the following is a list of some interesting species :—

Hypena strigatus F. (Lep. Noctuidae, until recently described in Mauritius as *H. jussalis*)
Chironomus transvaalensis Kieffer (Diptera : Chironomidae)
Cardiocladius latistylus Freeman (Diptera : Chironomidae)
Cricotopus rodrignensis Edwards (Diptera : Chironomidae)
Chaetocladius sp. (Diptera : Chironomidae)
Cletus capensis Westw. (Hem Coreidae)
Pachybrachius (Orthaea) lounsburyi Dist (Hem. *Lygaeidae*)
Chlamydatus sp. (Hem. Miridae)
Delphacodes propinqua Fieh. (Hem. Delphacidae)

291. In 1962, the Entomologist collected the following aphids with the aid of Moerick Zinc Chromate traps. The identifications were checked by specialists and the list is given hereunder :—

Host Plant	Date of Highest Incidence	Pest
Rave : *Brassica* sp. ...	23.6.62	.. *Lipaphis erysimi* (Kith) *(Myzus) (Nectarosiphon) persicae* (Sic).
Brède de Chine ...	23.6.62	... *Lipaphis erysimi* (Kith.)
Songe blanc *(Alocasia)* sp.	7.8.62	... *Aphis gossypii* Glover. *Macrosiphum euphorbiae* (Thomas)
Solanum melongena ...	23.6.62	... *Macrosiphum euphorbiae* (Thomas) *Myzus ? persicae* (Suber.) parasitized
Hibiscus spp. ...	23.6.62	... *Lipaphis erysimi* (Kith.) *Aphis gossypii* (Glover)
H. esculentus L. ...	23.6.62	... *Macroziphum euhporbiae* (Thomas)
Citrus	7.8.62	... *Toxoptera citricidus* (Kirk).
Maize	15.8.62	... *Rhopalosiphum maidis* Fitch
Musa spp.	15.7.62	... *Pentalonia nigronervosa* Coq.
Chrysanthemum sp. ...	15.7.62	... *Macrosiphoniella (Pyrethromyzus* Sanborni (Airv.)
Victoria amazonica ...	27.7.62	... *Rhopalosiphum nymphacae* (L.)
Capsicum annuum L. ...	23.6.62	... *Myzus persicae* (Suber.)
Artichoke	27.7.62	... *Dactynotus (Uromelan compositae* Heob.
Coconut	23.6.62	... *Cerataphis variabilis* H.R.L.
Wikstroemia indica ...	23.6.62	... *Myzus persicae* (Suber.)
Mustard	23.6.62	... *Lipaphis erysimi* (Kith.)
Rosa spp.	15.7.62	... *Rhodobium porosum* (Sanderson)
Citrus spp.* (Citron nain)	27.7.62	... *Toxoptera citricidus* Kirkaldy

XX. Agricultural Chemistry

Analyses

292. Some 1,300 samples of various products were analysed. Most of the analyses were carried out for various Divisions of the Department.

Feedingstuffs

293. Samples of raw materials were forwarded by the Livestock Feed Factory and the Veterinary Division for the purpose of ascertaining whether they were up to standard for incorporation into animal feeds. Samples of concentrate animal feeds were analysed at regular intervals as a check on the efficiency of mixing and formulation. Samples from two feed trials on cows and one on pigs were analysed. Dry matter, protein, fibre, ether extract and benzene extract were determined on the feed and on the dung of the animals under observation.

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*A psyllid *Diaphana ? citri* Kmo. was also common on Citrus. Unfortunately nymphs only were present so that a specific determination is not possible.

Fodder

294. The newly imported grasses were periodically analysed with a view to assessing their value as fodder under local conditions. Dry matter, protein, fibre, ash, calcium and phosphorus were determined.

(a) Elephant grass :—Selection of Elephant grass *Pennisetum purpureum* for leafiness had been carried out a few years ago. A variety trial was laid down in 1960 to compare the three selected strains with the unselected material. There was not much difference between the four strains as regards dry matter, crude protein and fibre contents.

(b) Pangola grass :—Application of nitrogen to Pangola grass, *Digitaria pentzii*, slightly increased the crude protein content of the herbage whilst decreasing the dry matter and crude fibre contents.

(c) *Chloris gayana*, Endebess strains :—

Date cut	4.1.62	18.1.62	2.2.62	7.3.62	30.3.62	3.5.62	1.6.62	20.7.62	1.9.62	28.12.62
% Dry matter ...	17.0	17.2	19.0	19.2	19.4	21.4	22.0	23.0	28.2	29.0
Crude Protein % D.M.	9.2	9.2	7.8	8.8	8.6	7.1	6.9	10.0	6.9	3.8

The dry matter content increased steadily and the crude protein decreased as the season advanced. The low rainfall in the middle of the year retarded growth with a consequent increase in fibre content and a decrease in protein.

Groundnuts

295. An interesting feature of the newly imported varieties of groundnuts was that the vines did not shed their leaves at maturity as does the local Cabri variety. Variety Manipintar, a high yielder possessed this feature ; an analysis of the vines at harvest gave a crude protein content of 13.4 per cent. of dry matter indicating their value as fodder. Ether extract, which is an indication of oil content was also higher for Manipintar than for Cabri as indicated in the table below :—

Variety	*Date Cut*	*Nuts*		*Vines*	
		% Dry Matter	*Ether Extract % D.M.*	*% Dry Matter*	*Protein % D.M.*
Manipintar...	April and May ...	56.7	49.5	21	13.4
Cabri ...	April	61.3	45.4	20	17.2

The behaviour of Manipintar in different localities is given below :—

Locality	*Date Cut*	*Nuts*		*Vines*	
		% Dry Matter	*Ether Extract % D.M.*	*% Dry Matter*	*Protein % D.M.*
Plaisance ...	May	57	49.5	38	8.1
Arsenal ...	April	48	50.4	23	12.8
Mapou	April	65	50	20	14.1
Centre de Flacq	May	59	46.9	25	9.2

Milk

296. The monthly check of the fat content of milk from the Curepipe Livestock Station was continued ; 504 samples were checked and the results are tabulated below :—

Fat %	*Below 3*	*3.0–3.4*	*3.5–4.5*	*4.6–5.0*	*Above 5*
Total No. of Samples ...	Nil	45	401	48	20
% No. of Samples ...	Nil	8.9	79.6	9.5	4.0

Month	*Jan.*	*Feb.*	*Mch.*	*April*	*May*	*June*	*July*	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*
% Samples giving 3.5–4.5 % fat ...	67	76	70	74.5	74.5	85	80	No Sampling	82	82	80	84

Working between the limits 3.5 and 4.5, the overall average fat content for the year was 3.96 per cent.

Soil

297. Soil samples from Reduit were analysed for their residual nitrogen content. This was found to lie between 0.20 and 0.32 per cent.

Silage

298. Complete analysis of silage was continued with a view to controlling its feeding value. About 60 samples were analysed. It has been difficult to correlate the lactic acid content with the feeding value of the material.

Miscellaneous

299. Among the samples analysed, *Medicago cupulina*, a common weed, was found to possess a protein content of 32.7 per cent. of dry matter. Aloe leaves, Spinach plants, Batatran, and *Canavalia maritima*, an ecological coloniser growing on sand beaches, were also analysed.

XXI. Engineering Division

300. The testing of new agricultural machines was commenced. A Wolseley Super Swipe and a Massey-Ferguson Seed and Fertilizer drill were tested and reported on.

Servicing of Departmental Machinery and Vehicles

301. The servicing and maintenance of all Departmental machinery was carried out at the Central Workshop. Complete service records were kept. The following servicing and repairs were carried out :—

Vehicles	105
Tractors	40
Other agricultural machines	62
Total ...	207

302. The following equipment and accessories were assembled, fabricated installed or repaired :—

(*a*) Assembly of a maize peanut planter, a 3–furrow plough, a 2–furrow plough, a chaff cutter, a blade terracer. A new Ferguson Tractor 35 was converted to 4–wheel drive.
(*b*) Building of one trailer. one wooden body for a lorry, one wooden floor for a lorry, three wooden bodies for trailers and a cabin for a lorry.
(*c*) A lorry, a Land Rover, a lorry cabin were spray-painted, and the wooden body painted. Four trailers and three signboards were also painted.
(*d*) Manufacture of 30 benches, 2 tables and 2 shelves
(*e*) Manufacture of 4 tarpaulins for lorries and 3 canvas hoods for Land Rovers
(*f*) Installation of an egg grader and of an EDB fumigation room
(*g*) Scraper for chaff cutter
(*h*) Toe-in gauge
(*i*) Three ball couplings for Fiat Tractor
(*j*) Two branding irons
(*k*) Two canopy frames for Ferguson Tractor
(*l*) Chimney for incinerator
(*m*) Fifteen Castor wheels
(*n*) Two angle iron benches
(*o*) Hundreds of foundation and other bolts, hinges, brackets and supports.

Buildings

303. The following buildings were completed and handed over :—

(*a*) One insectarium
(*b*) Two greenhouses
(*c*) Animal Health Laboratory at Reduit
(*d*) Extension of the Tea Office at Wooton
(*e*) Sun pens for pigs at Curepipe Dairy
(*f*) Overseers quarters at Palmar
(*g*) Conversion of office into cold store at Barkly Experiment Station
(*h*) Trench Silo at Palmar Breeding Centre
(*i*) Fencing of the Livestock Feed Factory

304. In addition work was started on the following :—

(*a*) A new store at the Livestock Feed Factory at Richelieu
(*b*) A Greenhouse to house a mist propagator at Wooton
(*c*) Extension of Central Board, Reduit

Advisory

305. Technical advice was sought by all Divisions of the Department. Lectures on Strength of Materials, Fluid, Mechanics and Applied Thermodynamics were delivered at the College of Agriculture.

Manufacture of Yeast Tablets

306. Sixteen million and five thousand yeast tablets were manufactured from imported yeast powder and sold to Government Institutions and 187,800 tablets were sold to the public.

Livestock Feed Factory

307. Three thousand six hundred and twenty-five metric tons of livestock feeds were manufactured from imported raw materials, save for molasses. Three thousand seven hundred and seventeen metric tons were sold. A statement of revenue and expenditure of the Livestock Feed Factory is given in Appendix " E ".

XXII. Fisheries

308. The duties of the Fisheries Division were to enforce the provisions of the law regulating fisheries in territorial waters and to study, recommend and implement such new measures as may be necessary for the better protection of fish. The Division also collected statistical data, and took all steps necessary to improve the efficiency of the industry and the welfare of the fishing community.

Oyster Culture

309. The installations made at Pointe de Flacq and Trou d'Eau Douce did not suffer from cyclone *Jenny*. The growth of young oysters obtained from the previous year's collectors was satisfactory. Two thousand new collectors were supplied to the above two farms, together with frames of woven wire for the breeding of second year oysters removed from the old collectors.

310. Some of the previous experimental installations were not so successful. At Beau Rivage, the pond was flooded with fresh water and silt and most of the oysters were killed. At Poudre d'Or (Bassin Humbert) a large proportion of the oysters died possibly due to excessive variations of salinity.

Construction of Fisheries Posts and Sheds

311. During 1962, a fisheries post was commenced at Black River; it was nearing completion by the end of the year. The erection of two fish sheds, each at Black River and La Gaulette was also undertaken by the Ministry of Works, bringing the number of sheds completed to seven.

Visit of a Fisheries Expert

312. Dr. Henri Fougère of the Fisheries Research Board of Canada, under the auspices of Canadian Technical Assistance, undertook a survey of the fisheries of Mauritius. He remained for three months visiting centres and studying fishing and marketing problems. He also visited Rodrigues with the Fisheries Officer. His report was available at the end of the year.

Sea Fishing

313. Fishing was adversely affected by the damage sustained by the fishing fleet in cyclone *Jenny* in February. Owing to the speed of this cyclone more boats were destroyed than in the far worse cyclones of 1960.

314. Controlled catch per quarter (tons) :—

	Average 1951–59	*1960*	*1961*	*1962*
1st Quarter	410.5	246.1	451.4	284.2
2nd Quarter	421.8	375.6	427.7	334.4
3rd Quarter	335.3	312.2	277.3	257.4
4th Quarter	434.5	434.3	331.0	339.3
	1,602.1	1,368.2	1,487.4	1,215.3

315. Owing to the fact that few boats are needed by the net fisheries, the catch of these fisheries in 1962 compared favourably with that of previous years and was greater than those of the years 1957–59 when the close season was in force :—

Year	*Catch (tons)*	*% Total Controlled catch*
1951–55 ...	410	25.0
1956 ...	372	22.5
1957 ...	364	21.8
1958 ...	319	19.7
1959 ...	342	26.3
1960 ...	418	30.6
1961 ...	413	27.8
1962 ...	414	34.0

316. The total controlled catch, though better than 1960, was lower by 305 tons than the average for the years 1956–60 :—

Year	*Average Yearly Catch (Ton)*	*Difference with the Yearly average of 1,517 tons*
1946–50	1,492	− 25
1951–55	1,637	+120
1956–60	1,520	+ 3
1960	1,368	−149
1961	1,487	− 30
1962	1,215	−302

317. The contribution to the catch by the various modes of fishing was as follows :—

	Catch in tons				
	Average 1951–55	*Average 1956–60*	*Catch 1960*	*Catch 1961*	*Catch 1962*
Nets	410	363	418	414	414
Baskets traps ...	715	628	492	596	408
Lines	247	275	253	248	183
Octopii	238	219	177	193	181
Lobsters	27	28	18	25	17
Harpoon Fish	—	7	10	11	12
TOTAL ...	1,637	1,520	1,368	1,487	1,215

TYPES OF FISH CAUGHT

318. The status of fish species was in kilogrammes as follows:—

	Kgs.
Capitaine *(Lethrinus nebulosus)* ...	28,195
Dame Berry *(Lethrinus mahsena)* ...	59,945
Battardet *(Lethrinus harak)*	28,253
Caya *(Lethrinus reticulatus)*	25,141
Cordonniers *(Siganus sp.)*	215,604
Rougets *(Mullus)*	49,739
Mullets *(Mugiloidae)*	64,434
Vieilles *(Senanidae)*	53,430
Licornes *(Naso sp.)*	100,749
Octopii	180,777
Lobsters	17,256
Other species of fish	391,839
TOTAL CATCH ...	1,215,362

LOANS TO FISHERMEN

319. The scheme of loans to fishermen for the construction of boats, which was started in 1960, was continued and by the end of the year, 993 loans had been granted, including 23 which were written off following destruction of the new boats by the cyclone *Jenny*. Total expenditure from public funds amounted to Rs 398,500 from the capital budget and Rs 69,325 from cyclone assistance funds. Refund of loans and progress of construction were satisfactory.

DETECTION OF FRAUD

320. The results of the control exercised by the Inspectorate, which are given below, show an important reduction in the incidence of contraventions in the last decade.

Year	*Cases prosecuted*	*Convictions*	*Total contraventions*	*Illegal nets*	*Explosives*	*Total of fines*
						Rs
1953 ...	515	508	550	129	16	16,172
1954 ...	586	571	635	148	44	15,256
1955 ...	473	463	524	110	54	15,036
1956 ...	390	383	436	117	35	11,059
1957 ...	403	396	509	101	30	11,689
1958 ...	429	423	466	115	26	12,360
1959 ...	319	305	421	83	40	10,518
1960 ...	230	229	330	67	23	7,477
1961 ...	248	243	325	100	27	9,971
1962 ...	195	192	270	61	35	4,950

In addition, 37 cases were pending at the end of the year.

Fresh Water Fish Culture

321. The breeding of ducks and geese on and near fishponds at the Curepipe Experiment Station has proved easy and economic. The birds feed mostly on grass, grazing around the ponds. Concentrates are fed in small quantities only once daily.

322. Fry of *Catla catla* and *Labeo Rohita*, each 1½ to 2 cms long were received from India by air on the 22nd September. Those that survived the journey were weighed and measured on 22nd December with the following results :—

(a) In a small pond ; each fingerling attained an average length and weight of 13 cms and 23 grams respectively.

(b) In a larger pond, the average length and weight were 17 cms and 63 grams respectively. It is encouraging to note that the few survivors of the first consignment of 'Catla catla' received in 1961, were growing satisfactorily. On 22nd December, 1962, their average length and weight were 28 cms and 305 grams respectively.

XXIII. Rodrigues

323. On the first day of the year, the island was affected by cyclone *Chantal*. In April, the very intense cyclone *Maud* was practically centred on the island. Finally, in December after an extended period of drought, cyclone *Bertha* brought with it exceptionally heavy rains which resulted in some flooding. The year under review therefore presented very bad climatic conditions for agricultural production and, towards the close of the year, it became evident that a dangerous famine period was to be expected in the early months of 1963.

324. During 1962, there was practically no harvest of annual foodcrops. Most of the fruit trees were destroyed by the cyclones. Labour engaged on agricultural development work had to be employed in 10 day shifts in order to spread wages as much as possible over the population. This continual changing of the labour force hindered development work.

Production and Marketing

325. The m. v. " Mauritius " made 10 trips to Rodrigues and the following table shows island exports on each voyage :—

Month	*Cattle*	*Sheep and Goats*	*Crates of Fowl*	*Pigs*	*Turkeys*	*Onion bags*	*Garlic bags*	*Acacia bags*	*Salt fish bales*	*Octopus bales*
January ...	200	773	150	315	45	—	2	7	109	118
March ...	—	99	—	—	60	—	—	—	150	61
March ...	203	522	109	—	72	1	1	91	456	170
April ...	—	208	19	241	65	—	—	6	143	36
May ...	212	751	74	247	61	—	—	121	378	287
July ...	185	736	77	444	66	—	—	88	380	191
August ...	23	391	36	170	68	—	—	9	134	141
September ...	151	789	81	501	82	20	8	63	313	247
November ...	42	713	55	432	104	632	20	53	551	221
December ...	60	981	35	508	—	—	5	11	210	96
Totals ...	1,076	5,963	636 or 30,000 head	2,858	623	653 or 97,950 lbs	36 or 5,400 lbs	449 or 76,330 lbs	2,824 or 564,800 lbs	1,568 or 313,600 lbs

326. The approximate value of these main exports was :—

		1960	*1961*	*1962*
		Rs	*Rs*	*Rs*
1,076	Cattle at Rs 200 each	123,000	154,000	215,200
5,963	Sheep and Goats at Rs 30 each ...	183,990	169,620	178,890
30,000	breed poultry at Rs 4 each	140,000	124,800	120,000
2,858	pigs at Rs 90 each	261,720	203,220	257,220
49	tons onions at Rs 350 per ton ...	81,200	46,550	17,150
2½	tons garlic at Rs 1,000 a ton	26,000	17,000	2,500
38	tons Acacia at Rs 400 per ton ...	104,000	30,000	15,200
2,800	bales of salt fish at Rs 90 per bale ...	244,080	220,500	252,000
1,570	bales of octopus at Rs 120 per bale ...	177,000	130,800	188,400
	Other	16,800	12,000	—
	TOTAL ...	1,357,790	1,108,490	1,246,560

327. The value of the exports for 1960 and 1961 is included for comparison and each is calculated at the same value as for 1962. The onions, acacia, and garlic crops were adversely affected by the cyclones and drought. The export of cattle has nearly doubled, indicating that the destocking of the Cattlewalk areas is becoming a reality although many more will have to go before ideal grazing conditions are achieved.

328. A survey was made of the methods employed by both producers and traders in the disposal of produce in Mauritius, with a view to improving marketing procedure.

LAND SETTLEMENT

329. In June, the Department of Agriculture took over the Land Lease Office and moved it from Port Mathurin to Citronelle. Cyclone *Maud* destroyed the office in Port Mathurin and many of the cards in the card index system were lost. The rest of the year was therefore taken up in making good lost records. An island wide survey was made. Statements were also taken from lessees. New cards were made out when necessary. An effort was made to collect outstanding rents with the following results :—

	1956–57	*1957–58*	*1958–59*	*1959–60*	*1960–61*	*1961–62*	*Totals*
	Rs c	*Rs c*	*Rs c*	*Rs c*	*Rs c*	*Rs c*	*Rs c*
Arrears as at 1.7.62 ...	23.50	49.80	609.30	2,934.35	9,363,30	25,594.59	38,574.84
Arrears as at 1.1.63 ...	12.00	28.00	413.90	2,065.25	6,528.60	19,025.59	28,073.23

A reduction in arrears of 10,500 over 6 months, despite cyclone damage to the record cards and a drought, indicated that good results may be expected from this re-organisation.

330. The position with regard to developed farms at the close of the year was as hereunder :—

	As at end 1960	*As at end 1961*	*As at end 1962*
Vegetable Plots	835	844	902
Lowland Farms	194	406	594
Unit Farms	695	1,063	1,100
TOTAL	1,724	2,313	2,596

EXPERIMENTAL AND DEMONSTRATION PLOTS

331. The coconuts at Baie du Nord, Oyster Bay, Ilot Chat, Baie Topaze and Combrani made satisfactory growth. At Baie du Nord, seedlings were available in quantity at the close of the year.

332. At the Oyster Bay Nursery, the following plants were prepared :—

	Quantity in hand at start of 1962	*Quantity produced during 1962*	*Sold to public*	*Used on Stations*	*Failures*	*Balance in Stock*
Breadfruit	106	233	—	104	2	233
Letchi layers	49	22	11	16	28	16
Coconuts	—	68	—	48	5	15
Citrus Seedlings	67	1,401	349	675	420	24
Bougainvillea	—	54	—	2	3	49
Croton	—	105	—	40	—	65
Grenade Fleur	—	28	2	16	—	10
Hibiscus	—	46	—	—	—	46
Myrtle	—	98	—	—	—	98
Guava	—	90	—	2	—	88

333. The ten demonstration farms scattered throughout the island continued to serve surrounding farmers. The sales of livestock to farmers were as below :—

	Dairy Cattle		*Pigs*			
Year	*Adult Females*	*Young Males*	*Adult Females*	*Adult Males*	*Young Females*	*Young Males*
1958 ...	1	1	—	—	—	13
1959 ...	7	3	—	—	5	35
1960 ...	39	61	6	—	74	135
1961 ...	38	66	1	—	178	220
1962 ...	34	65	22	7	341	329
TOTAL ...	119	196	29	7	598	732

LIVESTOCK BREEDING CENTRES

334. The stocking at each Centre at the close of the year was as follows:—

Pigs

Centre	*Adult Male*	*Adult Female*	*Young Male*	*Young Female*	*Total*
Oyster Bay	1	4	0	4	9
St, Gabriel	2	18	18	7	45
Le Chou	2	9	3	19	33
Marechal	2	9	10	13	34
B. Topaze	1	13	16	22	52
Demonstration Plots ...	1	9	8	7	25
TOTAL ...	9	62	55	72	198

Dairy Cattle

Centre	*Adult Male*	*Adult Female*	*Young Male*	*Young Female*	*Total*
Oyster Bay	3	18	7	15	43
St. Gabriel	6	21	4	22	53
Le Chou	3	33	8	22	66
Malabar	4	25	5	42	76
Marechal	1	14	4	32	51
B. Topaze	4	16	3	19	42
Demonstration Plots ...	—	—	—	17	17
TOTAL ...	21	127	31	169	348

Goats

Centre	*Adult Male*	*Adult Female*	*Young Male*	*Young Female*	*Total*
Oyster Bay	—	—	21	17	38
TOTAL ...	—	—	21	17	38

Centre	Sheep				Total
	Adult Male	*Adult Female*	*Young Male*	*Young Female*	
Combrani Island ...	3	15	9	17	44
TOTAL ...	3	15	9	17	44

ANALYSIS OF BREEDING TABLE

335. The breeding results of pigs, cattle and sheep were as follows :—

Centre	Pigs							
	No. of Farrowings	*No. of Piglets*	*No. of Piglets died*	*No. Culled*	*Males Born*	*Females Born*	*Average No. Litter*	*Weaning %*
St. Gabriel ...	24	176	63	19	92	84	7.3	64.2
Le Chou ...	18	151	28	22	75	76	8.4	81.3
Oyster Bay ...	25	209	103	37	98	111	8.0	50.7
Marechal ...	15	106	16	4	58	48	7.0	84.9
B. Topaze ...	27	218	24	48	115	103	8.0	88.9
Demonstration Plots	12	78	8	2	40	38	6.5	89.5
TOTAL ...	121	938	242	132	478	460	7.7	74.2

The weaning percentage fell by by 6% compared with the previous year.

Centre	Dairy Cows							
				Bought in		*Deaths*		
	No. of Calvings	*Males Born*	*Females Born*	*Males*	*Females*	*F.A.*	*M.Y.*	*F.Y.*
St. Gabriel ...	23	11	12	4	3	9	1	—
Le Chou ...	31	22	9	2	2	4	1	—
Oster Bay ...	19	5	14	3	4	2	—	—
Marechal ...	10	4	6	4	5	2	—	—
Malabar ...	30	14	16	8	2	—	—	1
B. Topaze ...	19	15	4	2	3	1	1	—
TOTAL ...	132	71	61	23	19	18	3	1

The comparatively high mortality of adult cows was due to repeated occurrences of deliberate cattle poisoning by arsenic by person or persons unknown.

SHEEP

No. of lambings	*Males born*	*Females born*	*Deaths*	
			Young Males	*Young Females*
32	19	14	3	3

CATTLEWALK

336. The annual cattle census was carried out in March and the results are given below compared with those for 1961 :—

Year	*Bulls*	*Bullocks*	*Cows*	*Calves*	*Total*
1961	793	260	3,354	1,537	5,944
1962	696	281	2,890	955	4,822

337. Work on the development of dairy farms on the cattlewalk continued. Despite the drought, approximately 40 acres of cattlewalk had been paddocked with stone walls and planted to Pangola grass. Grazing should commence in early 1963.

Mills and Milling

338. The Wizard Hammer Mill worked 15,445 lbs of maize and 376 lbs of acacia for the public. It also milled 28,090 lbs of maize and 98,251 lbs of acacia seeds for the Division. The groundnut oil expeller extracted oil from 373 lbs of groundnuts for the public and 869½ lbs of nuts for the Division. 6,315 lbs of paddy were milled.

Plant Protection

339. Onion and bean crops and fruit trees were sprayed at the request of local planters.

Tree Plantations

340. The re-afforestation programme was continued and the shade tree planting programme in the cattlewalk was completed.

XXIV. Lesser Dependencies

341. Four principal groups of islands were concerned, namely, Peros of 2,900 acres, Salomon of 2,000 acres, Diego of 6,000 acres and Agalega of 6,000 acres. The islands produce mainly copra and yields were low.

342. These islands were sold to a Seychelles Company.

343. Biological control of Rhinoceros beetle in the islands was pursued. The Indian Station of the Commonwealth Institute of Biological Control sent three consignments of the predator *Scarites dubiosus* to Mauritius for transmission to the islands. The assassin bug, *Platymerus rhadamanthus*, which feeds on adults and larvae of *Oryctes rhinoceros*, was bred in the laboratory prior to liberation at Diego Garcia.

APPENDICES

A. Staff

(as at 31st December)

Appointment	Name	Remarks
Director of Agriculture...	M. D. ffrench-Mullen, D.I.C.T.A., A.I.C.T.A.	
Deputy Directors (2) ...	S. Staub, A.R.C.S.T. (Glas.) A.M.I. Mech. E., Dip. Agric. (Maur).	
	A. Darné, F.R.C.V.S., Dip. Agric. (Maur.)	

Administrative and Finance Divisions

Chief Finance Officer ...	L. Hennequin	
Chief Executive Officer	S. W. Toolsy	Assumed duty 24.4.62.

In addition there are :—

3 Senior Executive Officers	
5 Executive Officers	
2 Higher Clerical Officers	
13 Clerical Officers	
1 Senior Stores Officer ...	Vacant.
1 Assistant Stores Officer	Vacant.
1 Stores Assistant ...	Vacant.
1 Confidential Assistant	
8 Typist/Stenographers	
1 Librarian	

AGRICULTURAL DIVISION

Senior Agricultural Officers (3)	B. D. Roy, B. Sc. Agri. (Wales) Dip. Agric. (Maur.) K. Lutchmeenaraidoo, B Sc. Agric. (Read.), Dip. Agric. (Maur.) 1 vacancy	
Agronomists (3)	L. A. Suzor, Dip, Agric. (Maur.) L. Moorlee, Dip. Agric. (Maur.) J. Seeyave, A.I.C.T.A. (Trinidad), Dip. Agric, (Maur.)	Returned from overseas leave 25.11.62.
Horticulturist	J. H. Julien, Dip. Agric. (Maur.)	
Agricultural Officers (9)...	P. Regnard J. Marot I. Fakim, Dip. Agric. (Maur.) M. Sooltangos, Dip. Agric. (Maur.) D. Lalji H. Choolun, Dip. Agric. (Maur.) A. Ferrière 2 Vacancies	

In addition there are :—

17 Assistant Agricultural Officers	3 Vacancies
1 Surveyor	
1 Assistant Surveyor	
8 Overseers Grade I	1 Vacancy
13 Overseers Grade II	

AGRICULTURAL CHEMISTRY DIVISION

Chemist	S. Belcourt, B.Sc. (Wales), Dip. Agric. (Maur.)	Returned from overseas leave 2.9.62.
Assistant Chemist ...	J. Pablot	

In addition there are :—

3 Scientific Assistants ...	1 Vacancy.

PLANT PATHOLOGY DIVISION

Plant Pathologist ...	L. Orieux, B.Sc. (Lond.) D.I.C.	Returned from overseas leave 22.10.62
Assistant Plant Pathologist	S. Félix, Dip. Agric. (Maur.)	

In addition there are :—

4 Quarantine Inspectors ...	2 Vacancies
1 Scientific Assistant	

Central Board Division

Registrar...	P. J. Galea, Dip. Agric. (Maur.)	
Assistant Registrar ...	Vacant	
Accountant	J. G. Gnany, A.A., C.C.A.	
Senior Assistant Chemist	Y. Wong You Chong, B.Sc. (Hons.), B. Agr. (Hons.)	Appointed on 25.9.62.
Assistant Chemist ...	R. Thélémaque, Dip. Agric. (Maur.)	

In addition there are: —

1 Investigational Officer and Weighbridge Inspector.	
3 Senior Test Chemists	
12 Test Chemists ...	employed during crop only.
13 Test Chemists ...	employed during crop only.
25 Samplers	

Agricultural College Division

Principal	A. North Coombes, O.B.E. B. Sc. (Read.), Dip. Agric. (Maur.)	On contract.
Lecturers (4)	R. Latulipe, B.Sc. (Lond.)	
	R. Burrenchobay, B.Sc. (Edin.)	
	C. Michel, B.Sc. (Hons.) Post Graduate Cert. Educ. (London)	
	S. Moutia, B.Sc. (Hort.), Dip.Agric. Econ. (Oxon), Dip. Agric. (Maur.). F.R.H.S.	
Assistant Lecturers and Laboratory	P. Guerandel. Dip. Agric. (Maur.)	
Demonstrators (4)	F. G. Carver, Dip. Agric. (Maur.)	
	2. Vacancies.	

Engineering Division

Agricultural Engineer ...	E. Limfat, M.Sc., M.A.S. A.E., A.M.I. AGR. E., B. Sc., A.C.G.I , A.M.I., Chem. E.	
Assistant Agricultural Engineer	M. Morad, Dip. Agric. (Maur.)	

In addition there are :—

1 Scientific Assistant ...	On Study leave.
1 Supervisor, Livestock Feed Factory	
1 Accounts Clerk	
1 Store Clerk	
1 Temporary Clerk, Extension Shop.	

ENTOMOLOGICAL DIVISION

Entomologist	J. E. A. Orian, B. Sc., F. R. E. S., F. Z. S., Dip. Agric. (Maur.) A.C.R.	Went on Study leave on 29.8.62
Assistant Entomologist ...	J. Monty, Dip. Agric. (Maur.)	Acting as officer-in-charge, Entomology Division from 29.8.62.

In addition there is:—

1 Scientific Assistant ... On Study leave.

DIVISION OF VETERINARY SERVICES

Senior Veterinary Officer	J. U. D. Shuja, M.R.C.V.S.	
Veterinary Officers (2) ...	D. Koerner, Dr. Med. Vet. (Hons)	Appointed 28.12.62
	1 Vacancy	
Animal Husbandry Officer	J. A. C. Delaitre, B. Agr. (N.Z.) Animal Husbandry	
Laboratory Technologist	L. Webb, A.I.M.L.T. (Lond.) Dip. Biol. (Lond). M.I. Biol. (Lond.)	Returned from overseas leave 16.12.62.
Senior Stock Inspector ...	J. H. Avice	Appointed 28.8.62.
Agricultural Officer (Poultry)	Clifford Gassin, N.D.P.H.	

In addition there are:—

1 Scientific Assistant
7 Stock Inspectors
18 Livestock Assistants

TEA DIVISION

Senior Agricultural Officer	D. N. Andrews	Appointed 30.4.62 on contract.
Agronomist	Vacant	
Agricultural Officer ...	A. Baissac, Dip, Agric. (Maur.)	

In addition there are:—

2 Assistant Agricultural Officers
3 Overseers, Grade II ... (1 permanently seconded to Midlands Tea Estate N.E.T.E. Co.)

FISHERIES DIVISION

Fisheries Officer ...	J. de B. Baissac ..	Returned from overseas leave on 1.4.62
Chief Inspector ...	J. Momplé	

In addition there are :—

3 Inspectors
3 Sub-Inspectors
16 Head Guards
36 Guards ... 1 Vacancy

RODRIGUES DIVISION

Senior Agricultural Officer	P. L. Hotchin, O.B.E., B.Sc. Agr. (Leeds), D.T.A. (Trinidad)	Returned from overseas leave 30.9.62
Agricultural Officer ...	E. Farla	

In addition there are :—

2 Assistant Agricultural Officers
1 Overseer, Grade I ... Vacant
9 Overseers, Grade II ... 1 Vacancy
1 Executive Officer
1 Clerical Officer
1 Stores Assistant
4 Clerical Assistants

B. Composition of the Principal Boards and Committees

(i) BOARD OF AGRICULTURE, FISHERIES AND NATURAL RESOURCES

Ex-Officio Members

The Director of Agriculture—*Chairman*
The Conservator of Forests—*Vice-chairman*
A Deputy Financial Secretary

Members of the Legislative Council

Dr. the Honourable L. R. Chaperon
The Honourable K. Jagatsingh
The Honourable R. Rey
Dr. the Honourable L. Teeluck

Representatives of Millers

Mr. Robert Doger de Spéville
Dr. P. O. Wiehe, C.B.E.

Representatives of Planters

Mr. Maurice Martin
Mr. Hassam Nazroo

Representative of the Chamber of Agriculture

Mr. L. H. Garthwaite

There were two meetings of the Board during the year.

(ii) AGRICULTURAL COLLEGE ADVISORY BOARD

The Director of Agriculture—*Chairman*

Nominated by His Excellency the Governor

The Honourable R. Balgobin, M.L.C.
Mrs V. Teeluck, B.A.
Dr. P. O. Wiehe, C.B.E.

Nominated by the Chamber of Agriculture

Mr. Lucien de Chazal
Mr. Maurice Paturau

Nominated by the Société de Technologie Agricole et Sucrière

Mr. P. de Sornay, Officier de la Legion d'Honneur
Mr. René Leclézio

Nominated by the Association of Former Agricultural Students

Mr. René Noël

The Board held three meetings during the year.

(iii) CENTRAL BOARD

Mr. Magistrate S. Mootoosamy—*Chairman*

Representative of Millers

Mr. Robert de Spéville
Mr. Françis North Coombes

Representatives of Large Planters

Mr. Roland Ducler des Rauches
Mr. Dhaneswock Sewraz

Representatives of Small Planters

Mr. Nunkeesor Saddul
Mr. Jagdeosing Chundunsing

The Board held thirty-two meetings during the year..

(iv) TOBACCO BOARD

Ex-Officio Members

The Director of Agriculture or any officer of his Department deputed by him—*Chairman*
The Commissioner of Excise—*Vice Chairman*
The Accountant General or any officer of his Department deputed by him
The Manager, Tobacco Warehouse

Appointed by His Excellency the Governor on the advice of the Minister

The General Manager of the British American Tobacco Co. (Mauritius) Ltd., or his representative
The Managing Director of the Amalgamated Tobacco Corporation (Mauritius) Ltd. or his representative
Mr. A. G. Rey
Mr. D. Sewraz
Mr. R. Ducler des Rauches
Mr. R. Ramchurn

The Board held thirteen meetings during the year.

(v) LAND SETTLEMENT ADVISORY COMMITTEE

The Director of Agriculture or representative—*Chairman*
The Senior Agricultural Officer (Extension)
The Registrar of Co-operative Societies
The Civil Commissioner (North)
The Civil Commissioner (South)
The Civil Commissioner (Moka—Flacq)
The Civil Commissioner (Plaines Wilhems—Black River)
The Honourable R. Balgobin, M.L.C.
Mr. Hassam Nazroo
Mr. Hurruck Hoolsy

The Committee held one meeting during the year.

(vi) Tea Control Board

Ex-Officio Members

The Director of Agriculture—*Chairman*
The Deputy Financial Secretary (Economics)

Members appointed by His Excellency the Governor

Mr. P. Boullé
Mr. J. Pilot
Mr. R. Ramdin
Mr. A. H. Maderbocus
Mr. B. Ramsahye
The Honourable V. Govinden, M.B.E., M.L.C.
The Honourable Y. Ramjan, M.L.C.
Mr. F. North Coombes.

The Board held twelve meetings during the year.

(vii) Sugar Planters' Rehabilitation Fund Committee

Ex-Officio Members

The Director of Agriculture—*Chairman*
The Registrar of Co-operative Societies.

Members appointed by His Excellency the Governor

Mr. C. Dwarkasingh
Mr. J. Lagesse
Mr. S. Narain
Mr. J. Roodurmun
Mr G. Robillard

The Committee held thirty-two meetings during the year.

C. Legislation

Ordinance No.	1 of 1962	:	The Cyclone and Drought Insurance Fund (Amendment, Ordinance, 1962.
do	9 of 1962	:	The Cyclone and Drought Insurance Fund (Amendment No. 2) Ordinance, 1962.
do	13 of 1962	:	The Sugar Industry Reserve Funds (Amendment) Ord., 1962
do	21 of 1962	:	The Fisheries (Amendment) Ordinance, 1962
do	29 of 1962	:	The Sugar Industry Pension Fund (Amendment) Ord., 1962
Proclamation No.	7 of 1962	:	To proclaim the rate of the duty leviable under the Central Board (Cost of Administration) Ordinance, 1951, on the sugars of 1960 crop exported from the Colony.
do	10 of 1962	:	To amend Proclamation No. 17 of 1959. (To control the importation of certain articles)
do	16 of 1962	:	To proclaim the rate of the duty leviable under the Central Board (Costs of Administration) Ordinance, 1951, on the Sugars of the 1961 Crop exported from the Colony
do	18 of 1962	:	Further to amend Proclamation No. 5 of 1956 (To specify the varieties of sugar cane which may be planted and propagated in the Colony and to fix the time within which other varieties of sugar cane growing in the Colony shall be uprooted)
do	24 of 1962	:	To authorise the use of large nets for fishing during the period extending from the 1st October, 1962, to 31st January, 1963

Govt. Notice No.	45 of 1962 :	The Civil Establishment Ordinance, 1954
do	53 of 1962 :	Cyclone and Drought Insurance Fund Ordinance, 1957
do	62 of 1962 :	Regulations made by the Minister under sub-section (8) of section 3 of the Sale of Canes (Control) Ordinance
do	66 of 1962 :	The Cyclone and Drought Insurance Fund Ordinance, 1957
do	77 of 1962 :	Regulations made by the Minister after consultation with the Tea Control Board under section 16 of the Tea Industry Control Ordinance, 1959
do	90 of 1962 :	The Civil Establishment Ordinance, 1954
do	102 of 1962 :	Animal Diseases Ordinance
do	105 of 1962 :	The Civil Establishment Ordinance, 1954.

D. List of Publications and Contributions to Literature by Officers of the Department of Agriculture during 1962

Name of Author	*Title of Paper*	*Name, Volume No. Page Nos. of Periodical in which published*
Baissac, A.	Essais de desherbants dans les plantations de theiers	Revue Agricole et Sucrière de l'Ile Maurice, Vol. 41 No. 3, pp, 142–146
Félix, S. and Pablot, J.	Investigations on spray deposits of Zineb on potato leaves	Revue Agricole et Sucrière de l'Ile Maurice, Vol. 41 No. 3, pp, 138–141.
Félix, S.	Investigations on *Sclerotinia sclerotionum* (Lib) de Bary, the fungus causing sclerotial disease of vegetables and ornamentals in Mauritius,	Revue Agricole et Sucrière de l'Ile Maurice, Vol, 41 No. 4, pp. 205–207,
Limfat, E.	Review of a decade of activities at the Livestock Feed Factory	Revue Agricole et Sucrière de l'Ile Maurice, Vol. 41 No. 5, pp. 273–277.
North Coombes, A, ...	College of Agriculture	New Commonwealth Vol. 40, No. 9, p. 567.
North Coombes, A. ...	Ginger in Mauritius	Revue Agricole et Sucrière de l'Ile Maurice, Vol. 41 No. 6, pp. 327–339.
Orian, J. E, A. ...	Pest Control Recommendations ...	Revue Agricole et Sucrière de l'Ile Maurice, Vol. 41 No. 2. pp. 87–116.
Orian, J. E. A, ...	List of Diptera	Bulletin No. 94.
Orieux, L.	Notes pour servir à la culture du rosier à Maurice.	Revue Agricole et Sucrière de l'Ile Maurice, Vol. 41 No. 3, pp. 147–148,
Roy, B, D.	Research work in progress on field crops at the Department of Agriculture	Revue Agricole et Sucriere de l'Ile Maurice, Vol. 41, No. 6. pp. 323–326.
Staub, S. et Darné, A.	Rapport preliminaire sur l'Utilisation des tourteaux de filtres-presses comme aliment pour les animaux.	Revue Agricole et Sucrière de l'Ile Maurice, Vol. 41 No. 1, pp 7–24.

E. Richelieu Livestock Feed Factory

STATEMENT OF REVENUE AND EXPENSES FOR THE YEAR ENDED 30TH JUNE, 1962

EXPENSES

	Rs c	Rs c	Rs c
Stock of Materials on 1.7.61 :—			
Raw Materials	307,661 75		
Less : Amount not paid in 60–61 ...	92,160 46		
		215,501 29	
Manufactured Feeds	10 522 05		
Add : Amount not accounted for last year now adjusted (Extension Shop)	62 80		
		10,584 85	
Aloe Bags		17,638 75	
			243,724 89
Purchases :—			
Wheat Bran		125,837 94	
Maize		377,459 67	
Broad Beans		4,544 00	
Cod Liver Oil		29,962 85	
Pollard		45,621 34	
Groundnut Cakes		140,335 91	
Lucerne		33,969 49	
Food Yeast		2,912 14	
Cotton Seed Cakes		52,253 44	
Oats ...		24,174 11	
Rice Sweeping		488 00	
Split Peas		684 00	
Salt ...		2,280 00	
Bone Meal		31,266 41	
Molasses		38,138 79	
Meat Meal		71,387 82	
Wheaten Flour		5,625 00	
Milk Powder		31,778 95	
Fish Meal		101,832 37	
Baled Bagasse		400 20	
Vitamin		4,666 75	
Antibiotics		2,484 63	
Aloe Bags		46,020 00	
			1,174,119 20
Wages		61,723 12	
Electricity		7,515 70	
Rent ...		2,400 00	
Insurance		674 14	
Transport		3,813 93	
Maintenance of Machinery and Lorry		10,411 85	
Office Expenses		133 55	
Adjustment (Amount over-remitted at Extension Shop)		1 50	
			86,679 79
Net Profit			35,958 96
			1,540,482 93

REVENUE

	Rs c	Rs c	Rs c
Sale of Feeds			1,255,387 80
Stock of Raw Materials on 30.6.62 ...	420,928 45		
Less : Amount not paid in 61–62 ...	151,322 92		
		269,605 53	
Stock of Manufactured Feeds on 30.6.62		10,108 35	
Stock of Aloe Bags on 30.6.62		5,381 25	
			1,540,482 93

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F. Conversion Table

1 Arpent	...	1.043 acres
1 Gaulette	...	10.6 feet
1 Metric Ton	...	1,000 kilos
1 Long Ton	...	1,016 kilos
1 Kilo	...	1,000 grams
1 Pound avoirdupois	...	454 grams
1 Hundredweight	...	50.803 kilos
1 Cord	...	0.282 cubic feet
1 Imperial gallon	...	4.54 litres
1 Rupee	...	1/6 d. sterling

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1 Imperial gallon		...	4.54 litres
1 Rupee	...	...	1/6 d. sterling